WORCESTER STATE COLLEGE

CATALOG

UNDERGRADUATE AND GRADUATE STUDIES

1988-89

ACCREDITATION

Worcester State College is accredited by the New England Association of Schools and Colleges, Inc., a non-governmental, nationally recognized organization whose affiliated institutions include elementary schools through collegiate institutions offering post-graduate instruction.

Accreditation of an institution by the New England Association indicates that it meets or exceeds criteria for the assessment of institutional quality periodically applied through a peer group review process. An accredited school or college is one which has available the necessary resources to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is also addressed through accreditation.

Accreditation by the New England Association is not partial but applies to the institution as a whole. As such, it is not a guarantee of the quality of every course or program offered, or the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend the institution.

Inquiries regarding the status of an institution's accreditation by the New England Association should be directed to the administrative staff of the school or college. Individuals may also contact the Association:

NEW ENGLAND ASSOCIATION OF SCHOOLS AND COLLEGES
THE SANBORN HOUSE, 15 HIGH STREET
WINCHESTER, MASSACHUSETTS 01890
617:729-6762

The following programs are accredited by their respective professional organizations: Nursing, The National League for Nursing; Speech Pathology/ Audiology, the American Speech-Language-Hearing Association; Occupational Therapy and Nuclear Medicine Technology, the Committee on Allied Health Education and Accreditation, American Medical Association. Education programs are approved by the Massachusetts State Department of Education.

POLICY ON NONDISCRIMINATION

The College is committed to a policy of nondiscrimination and affirmative action in its educational programs, activities, and employment practices. The College maintains and promotes a policy of nondiscrimination on the basis of race, religion, color, sex, age, handicap, veteran status, marital status, or national origin. This policy incorporates by reference the requirements of Federal Executive Orders 11246 and 11375 as amended; the Civil Rights Act of 1964 as amended; Title IX of the Educational Act of 1972; Sections 503 and 504 of the Rehabilitation Act of 1973, as amended; Section 402, Vietnam Era Veterans Readjustment Assistance Act of 1974; and pertinent laws, regulations, and executive directives of the Board of Regents of Higher Education, the Commonwealth of Massachusetts, and other applicable state and federal statutes.

The Director, Affirmative Action, may be contacted regarding the College's policy of nondiscrimination and affirmative action (including compliance with Section 504 of the Rehabilitation Act of 1973, as amended).

CHANGE OF CATALOG INFORMATION

Information contained in this catalog is subject to change by order of the Massachusetts Board of Regents of Higher Education or the Worcester State College Board of Trustees. It is the policy of the College to provide advance notice of changes whenever it is reasonable and practical to do so.

WORCESTER STATE COLLEGE

486 Chandler Street, Worcester, MA 01602-2597

CATALOG

UNDERGRADUATE AND GRADUATE STUDIES

Academic Year

1988 - 1989

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1. General Information

PROLOGUE

From its founding in 1874 Worcester State College has been dedicated to educational programs that lead to self-enrichment and to careers in the professions, government, business and industry.

As a public, state-funded college governed by a local Board of Trustees under the direction of the Massachusetts Board of Regents of Higher Education, Worcester State College is empowered to award baccalaureate and master's degrees in education and in the arts and sciences. While continuing its tradition of serving the residents of the Commonwealth and especially the Greater Worcester area, the College has earned a reputation for quality teaching by dedicated faculty in classes of moderate size, and for programs responsive to its students' and society's changing needs.

Worcester State College, situated in New England's second largest metropolis, is within an hour's drive of all major population centers in the region. The College is convenient to the Worcester Airport, a regional facility, and to Interstate Highways 90 (the Massachusetts Turnpike), 190, 290 and 495. The campus is served by buses of the Worcester Regional Transit Authority and by the shuttle bus service of the Worcester Consortium for Higher Education.

MISSION

To assure that society at large and the Commonwealth of Massachusetts are well served by its graduates, Worcester State College strives to offer programs of excellence in undergraduate, graduate, and continuing higher education. The College is committed to providing accessible and affordable, and high quality educational opportunities in a full spectrum of liberal and professional fields. Baccalaureate studies built around a required core of liberal arts foster analytical and creative skills, and guarantee that each professional and preprofessional graduate understands our culture, our institutions, and our values.

Within the context of this mission Worcester State College affirms certain objectives. Specifically, we seek to integrate classroom instruction and professional experience, to develop independent inquiry and investigative skills, and to expose students to a variety of viewpoints, encouraging them to clarify both their personal and professional philosophies and to lead lives of initiative, imagination, and responsibility. We seek to allocate our human and physical resources in response to changing needs and conditions. We seek to encourage community service through faculty expertise and student and alumni involvement. Finally, the College endeavors to serve as a cultural center and resource for central New England. Each of these general objectives exemplifies our commitment to excellence in teaching as our prime responsibility.

STATEMENT OF PURPOSE

Among the state colleges, Worcester State College is unique in its location in a major cultural, industrial, and scientific center at the geographic heart of New England. The College integrates the distinctive opportunities provided by this metropolitan setting into its programs of undergraduate, graduate, and continuing education. In turn the College recognizes its obligation to enrich the City and the Commonwealth through scholarship, research, and public service.

Foremost among Worcester State College's priorities is its commitment to excellence in instruction. Among its varied programs the College emphasizes professional options in areas of current social need: the managerial sciences, high technology, health and human services. Preparation in the natural and social sciences, humanities, and teacher education is also offered. All programs are built upon a core of liberal studies designed to enhance creative, analytical, and communicative skills.

Equally vital is Worcester State College's concern for reducing the barriers to educational opportunity. The College actively seeks to develop a multi-cultural campus community which mirrors the rich diversity of its urban environment. An array of services, including supportive programs for the educationally disadvantaged, and college success programs for the non-traditional student, underscore the College's commitment to cultural pluralism as a positive value.

THE CAMPUS

The College, located on 58 acres of rolling, wooded land facing Chandler Street on the west side of Worcester, combines urban convenience and a suburban setting. It contains the following facilities:

Administration Building

Constructed in 1932 to inaugurate the College's new location, the administration building houses the central administration, including undergraduate and graduate deans' offices, admission and financial aid offices, faculty offices, classrooms, laboratories, and an auditorium equipped for theatrical productions.

Sullivan Academic Center

Named for Eugene A. Sullivan, College president from 1947 to 1970, the Sullivan Academic Center is the principal instructional center on campus. It contains a large lecture hall, science laboratories, classrooms and a large attached auditorium. Among its facilities is the Communication Disorders Clinic, where the general public as well as the college community may obtain evaluation and habilitative assistance for organic and developmental language, speech, and hearing disorders. The clinic is an example of Worcester State College's long tradition of combining professional training with service to the community. Also located in the Sullivan Academic Center are the administrative offices of the registrar, academic advising, evening undergraduate, summer, graduate, and continuing education programs.

Learning Resources Center

The Learning Resources Center houses the library, a comfortable place for study and research with over 170,000 volumes and approximately 900 current periodicals. It also encompasses a complex of modern telecommunications and electronic learning facilities. Among these is the Computer Center, supported by a network of Control Data mainframes via the Regents Computer Network, a Wang minicomputer, and four microcomputer laboratories. All students have unlimited access to the Computer Center without cost. Also in the LRC are television studios and a production facility, photographic laboratories, an audiovisual center equipped for production of slides and tapes, and the student-operated radio station WSCW. The Office of the Dean of Administration, Printing and Publishing, seminar rooms, classrooms, lecture halls, and faculty offices are also located in this building.

Physical Education Building

In addition to housing education, urban studies, art, occupational therapy and physical education faculty, and indoor athletic and recreational facilities, the gymnasium building includes one of the College's two child care centers. The center provides an educationally enriched environment for preschool children of students, faculty and staff, and other area parents when space permits.

Chandler Village

Chandler Village, which accommodates nearly 500 full-time undergraduate students, is an unusual and distinctive residential townhouse grouping. Additional information regarding housing can be found under Services for Students.

Student Center

The modern, vibrant Student Center serves the entire College population and is conveniently situated at the physical center of the campus. This facility contains a cafeteria/dining area, snack bar, pub, and lounges; rooms for games, music, and television viewing; offices for Student Affairs personnel and student organizations; a print center; a 200 seat auditorium; a dancing and exhibit area; a bookstore, and several meeting rooms. It has been accurately described as the "living room or hearthstone of the College."

Outdoor Facilities

The College has the advantage of naturally attractive surroundings. Among its outdoor facilities are a football field, baseball and softball diamonds, field hockey and all-purpose field, tennis courts, and a tartan track.

SERVICES FOR STUDENTS

Orientation

The orientation program introduces incoming undergraduates to the College and to campus life by identifying services, activities, and opportunities that exist for every student. The orientation program utilizes a small group format which allows personal attention to students' questions and provides a warm welcome to the College.

The Counseling and Placement Center

The Counseling and Placement Center assists students in their personal and professional development. Individual counseling is available for students to discuss a wide range of personal issues. Seminars and support group programs on a variety of topics related to personal, social as well as career growth and development are available.

Students can obtain assistance in defining their professional interests and abilities; to select appropriate careers and to prepare themselves effectively for employment. Additional services include interest testing, graduate and professional school advising, and on-campus recruitment. The staff provide information on internships and conduct seminars on subjects such as the preparation of resumes, job interviews, and the search for a position. This office also maintains current listings of available professional positions corresponding to the College's academic programs and listings of part-time and summer employment opportunities.

The Center administers CLEP examinations and provides applications and study guides for various national testing programs. Services of the Counseling and Placement Center are available to all undergraduate and graduate degree candidates and to Worcester State College alumni.

Health Services Office

The Health Services Office is located in the Gymnasium Building off the main foyer. The office is staffed full-time by a registered nurse and part-time by a physician. Health Services hours are 8:30 a.m. to 4:30 p.m., Monday through Friday; the College physician is in attendance on Monday, Wednesday, and Friday mornings.

Services include acute and routine medical care, allergy injections, specialty referral and hypertension screening. Treatment is kept completely confidential. Students' health history questionnaires are kept on file in this office; health insurance brochures and claims forms are also available.

Before beginning classes all new freshmen and transfer students are required to provide the following evidence: 1) physical examination and health history questionnaire filled out by their private physician; 2) recent Mantoux tuberculin test (Tine test not acceptable); 3) record of childhood illness or immunizations for measles, mumps and polio; and 4) record of rubella immunization or rubella titer.

Athletics and Recreation

The objectives of the Athletic Department include promoting qualities of leadership and sportsmanship, enhancing emotional and social development, and fostering the development of physical skills of undergraduate students. Thus the Athletic Department offers a wide range of intramural and intercollegiate activities.

As a member of the National Collegiate Athletic Association (NCAA), the Massachusetts State College Athletic Conference (MSCAC), the Eastern College Athletic Conference (ECAC), and the Massachusetts Association for Intercollegiate Activities for Women (MAIAW), the College competes in baseball, basketball, softball, golf, ice hockey, swimming, tennis, cross country, field hockey, track, volleyball and football at the Division III level. Crew and equestrian are offered at the club level. Two Worcester State College teams (football and women's basketball) won national championships in recent years.

Intramurals can be a viable opportunity for commuting students to develop social contacts with resident students. Intramurals include football, coed football, basketball, tennis, street hockey, softball, volleyball, and golf.

Any student who wishes to participate in intramural sports, regardless of demonstrated ability or past experience, is urged to do so. Students are employed by the Intramural Director and have the opportunity to earn money while developing their supervisory skills.

Student Activities and Organizations

A wide spectrum of cultural, social, and service activities complement classroom studies at the College. Films, topical lectures, performing artists, dances, and field trips are regular features. Students are encouraged to participate in one or more of the diverse service and programming organizations: WSCW Radio, the Student Television Organization, **The Student Voice** (weekly newspaper), the Yearbook, Lancer Society, the Newman Association, The Live

Connection, the Exhibitionists, Program Council, Lecture Committee, Student Government Association, Poetry Center, Third World Alliance, Outdoor Club, Ski Club, Daytime Programming Committee, and others, more than 20 in all.

There is an active Student Government Association with a Student Senate comprised of representatives from each class and a SGA President. Annual campus events include Homecoming, Winter Carnival, and Senior Week.

Residential Services

The on-campus residential facility at Worcester State College is Chandler Village. Chandler Village accommodates approximately 500 students. The residential area is staffed by a Director and Assistant Director of Housing, two Graduate Resident Assistants, and a team of undergraduate students who serve as Resident Assistants. The members of the residence staff work together to respond to the physical, emotional, and developmental needs of all resident students.

Chandler Village is a unique living area featuring 63 apartments in 26 interconnected town houses. The apartments accommodate four, eight, 12, or 14 persons and include common living and kitchen areas. The Village, as it is commonly called, encourages community interaction and personal development in a living/learning environment.

International Student Services

The Director of Counseling and Placement serves as advisor to all international students, and assists with immigration matters and personal counseling. The College is authorized under federal law to enroll nonimmigrant alien students. Any student who is not a United States citizen **must** contact the Director of Counseling and Placement upon acceptance to the College.

Special Services Program

The Special Services Program is a federally-funded program designed to help low-income, first generation, physically disabled, academically underprepared, and/or limited-English-speaking students successfully complete a college curriculum. Individualized support services help eligible students stay in school, develop marketable skills, and graduate. Services include academic assistance, career awareness, cultural enrichment, information about financial aid, individual and group tutoring, personal, academic, and career counseling, student advocacy, and study skills training.

Learning Assistance Center (LAC)

Located in room 219 of the Sullivan Academic Center, the Learning Assistance Center exists for the purpose of helping students become independent learners. This is accomplished by improving students' learning skills, problem-solving skills and/or study skills. Students having difficulty or anticipating any difficulty with courses are encouraged to contact the Center. There is no additional charge for most of the services and materials provided by the Learning Assistance Center.

Veterans' Affairs

The Special Student Services Office provides general information of interest to veterans and dependents of veterans enrolled at the College. Veterans or their dependents who are receiving or wish to receive Veterans' Educational Benefits as a result of attending the College are required to keep the Special Student Services Office apprised of their student status.

United Campus Ministry

The United Campus Ministry (UCM), an interfaith group composed of 20 clergy representing 13 denominations, serves under the direction of a full-time chaplain who acts as its chairperson. Members of the UCM conduct religious services and provide pastoral counseling for all students, and are available for personal consultation when needed.

Campus Security

Campus Security is responsible for the safety and security of the Worcester State College Community: students, faculty, staff, and guests. Security is provided 24 hours a day throughout the calendar year by a full-time staff of 11 sworn officers. The officers enforce the rules and regulations of the College and the General Laws of the Commonwealth of Massachusetts. The Security Office is located near the auditorium in the Sullivan Academic Center.

College Bookstore

The College Bookstore is located on the first floor of the Student Center. The bookstore stocks school supplies, gift items with the WSC seal, health and beauty aids, and paperback books, among other items. Large-order discounts are available for any club or organization on campus.

Required texts for all classes can be purchased at the bookstore. Students should purchase all necessary texts at the beginning of each term. Textbook refunds are made within 10 days after the start of classes; returned books must be accompanied by a cash register receipt. The refund policy is posted in the bookstore.

Dining Services

The Dining Services at Worcester State College offer two separate areas of operation where students may purchase food. The Snack Bar is located on the lower level of the Student Center and offers fast food, hot and cold beverages, subs, pizza, novelty ice cream and various snack foods. Hours of operation are 7:45 a.m. to 6:30 p.m., Monday through Friday and 4:00 p.m. to 6:00 p.m. on Saturday and Sunday.

The Dining Room/Cafeteria is located on the top level of the Student Center. The Dining Room is open Monday through Friday for lunch (11:30 a.m. - 1:30 p.m.) and dinner (4:30 p.m. - 6:00 p.m.). Lunch offers a deli bar and grill featuring daily specials, soup and quiche du jour, hot entrees and vegetables, homemade desserts, salad and beverage bars. Dinner offers two hot entrees, hot vegetables, homemade desserts, salad and beverage bars. Students and visitors may use the Snack Bar or Cafeteria to purchase items with cash or coupons.

COMMUNITY RELATIONS

The College strives to extend its resources to the community and to involve the community in its educational endeavors. The following activities are examples of these efforts.

Office of Institutional Advancement and Alumni Affairs

Actively involved in community outreach and community relations to enhance the goals and mission of the College, the Office of Institutional Advancement functions as both fund-raiser and friend-raiser. Established in 1983, the office has coordinated a variety of events that foster College and community interaction. The College participates in City and Chamber of Commerce events, hosts conferences and community breakfasts, sponsors lectures and supports a variety of initiatives in the arts.

The Worcester State College Alumni Association, Inc. is responsible for alumni fund-raising, the McKelligett Lecture Series, planning and support for the annual Career Day, Homecoming, and Class Reunions. The Association also publishes the **WORCESTER STATEment** and Alumni Alert.

The Office seeks to foster and maintain lifelong fellowship among alumni, the majority of whom live and work in the Worcester area, and friends of the College. Graduates and friends of the College are encouraged to participate in campus events and to provide current addresses, employment information and other items of interest. Funds from friends and alumni provide scholarships, laboratory and classroom equipment, financial aid seminars for students and their families, lectures, and other support essential to sustaining quality education.

Special Programs and Activities

Each year the College calendar includes numerous programs and events to which the public is invited. Thousands of people participate annually in workshops and conferences on topics such as energy, elder affairs, and hearing disabilities. The following sample of activities and organizations demonstrates the variety of sources from which such intiatives arise.

Visiting Scholar Program: Each semester a Distinguished Visiting Scholar is invited for a period of residence at the College to teach, address student and community groups, and serve as a resource person in his or her academic specialty. Each visiting scholar represents a different academic discipline.

Center for the Study of Human Rights: Established in 1982, the Center is the first such academic center in New England. It has sponsored lectures and symposia on human rights issues in Northern Ireland, South Africa, the Middle East, Central America, the Philippines, and elsewhere. The Center serves as liaison with other human rights organizations in the area, promotes the development of human rights curricula and studies on the college and secondary levels, and has established a collection of human rights literature for students and researchers in the field.

The Poetry Center: The programs of this student organization are often presented in conjunction with the Worcester County Poetry Association and other area organizations. Seamus Heane, Czeslaw Milosz, Dennis Brutus, and Gwendolyn Brooks are some of the nationally and internationally acclaimed poets who have read on campus.

The President's Lecture Series: Annually, since 1978, an outstanding member of the Worcester State College academic community has been selected to deliver the President's Lecture. This series has proven an incentive for enriching and promoting faculty research and scholarship as well as an intellectual challenge to the entire community.

Science and Human Condition Series: Established in 1972, the Worcester State College Science and Human Condition Series sponsors films, lectures and panel discussions on major and topical issues of an interdisciplinary nature. Worcester State College faculty and invited speakers participate as panelists and discussants in programs designed to increase understanding through dialogue between specialists in the sciences and humanities.

Academic Honors Convocation: Conducted annually, the Academic Honors Convocation gives special recognition to Worcester State College students who excel academically. Students so honored include those achieving the highest quality point average in individual disciplines, scholarship recipients, special academic award recipients, dean's list and honor society inductees.

2. Undergraduate Studies

MAJOR AND MINOR PROGRAMS

All of the following programs are offered during the day; those marked by an asterisk (*) are also available through the evening undergraduate program.

Discipline	Major	Minor	Sponsoring Department
Art*		X	Media, Arts and Philosophy
Biology	X	X	Natural and Earth Sciences
Business Administration*	X	X	Business Administration and Economics
Chemical Engineering+ (freshman and sophomore years)			Natural and Earth Sciences
Chemistry	X	X	Natural and Earth Sciences
Civil Engineering+ (freshman and sophomore years)			Mathematics and Computer Science
Coaching		X	Health Sciences
Communication Disorders	X	X	Communication Disorders
Computer Science*	X	X	Mathematics and Computer Science
Early Childhood Education	X		Education and Human Resources
Economics	X	X	Business Administration and Economics
Elementary Education	X		Education and Human Resources
English*	X	X	Languages and Literature
French	X	X	Languages and Literature
Geography	X	X	Natural and Earth Sciences
Health Fitness		X	Health Sciences
Health Studies*	X	X	Health Sciences
History*	X	X	History and Political Science
Mathematics	X	X	Mathematics and Computer Science
Mechanical Engineering+ (freshman and sophomore years)			Natural and Earth Sciences
Media	X	X	Media, Arts and Philosophy
Music		X	Media, Arts and Philosophy
Natural Science*	X	X	Natural and Earth Sciences
Nursing - Generic	X		Nursing
Nursing - RN Upper Division*	X		Nursing
Occupational Therapy*	X		Health Sciences
Philosophy*		X	Media, Arts, and Philosophy
Physics	X	X	Natural and Earth Sciences
Political Science		X	History and Political Science
Psychology*	X	X	Social and Behavioral Sciences
Secondary Education		X	Education and Human Resources
Sociology	X	X	Social and Behavioral Sciences
Spanish	X	X	Languages and Literature
Theatre		X	Media, Arts and Philosophy
Urban Studies	X	X	Education and Human Resources

+A Transfer Program

The following interdisciplinary concentrations are also available:

Concentration	Sponsoring Department
Gerontology	Education and Human Resources
Labor Studies/Labor Relations	Business Administration and Economics and History and Political Science
Middle East Studies	History and Political Science
Nuclear Medicine Technology	Natural and Earth Sciences

ADMISSION

Requirements for admission to undergraduate study, in day or evening programs, are established by the Board of Regents of Higher Education. The Admissions Standards Policy of the Board of Regents emphasizes the high school academic background required for admission to the state college system. This policy is in two parts:

1. Unit requirements in specific courses.
2. Admissions eligibility index.

Unit Requirements:

The following high school studies are minimum requirements:

1. Four years of English. These should be college preparatory courses in composition and literature which include the development of writing and comprehension skills.
2. Three years of mathematics. These should be college preparatory courses in subjects such as algebra, geometry, trigonometry, elementary functions, and mathematical analysis. A fourth year of mathematics, usually calculus, is strongly recommended for students who plan to pursue study in engineering or physics.
3. Two years of natural science, both of which should include laboratory.
4. Two years of social science, which should include one year of United States history and government.
5. Two years of study in a single foreign language.
6. Three elective units from the following disciplines: English, mathematics, natural science, social science, foreign language, computer science, visual/performing arts and the humanities.

Those who graduated from high school three or more years ago, or obtained the GED (high school equivalency certificate) or an evening high school diploma are exempt from the academic unit requirements.

Exemptions are allowed for students graduating from a high school that has requested and obtained from the Board of Regents specific exemptions from units that the school is unable to offer.

Vocational-Technical graduates must complete the unit requirements in all areas except foreign language and electives. The technical vocabulary work associated with the three to four years of Chapter 74 vocational study can substitute for the two year foreign language requirement. Three vocational-technical units may fulfill the three elective units required by the admission standards policy.

Associate degree transfers and other transfers who meet the requirements of the campus admissions policy are exempt from the academic unit requirements.

Certified learning disabled students who demonstrate a language dysfunction that would preclude the learning of foreign language are exempt from the two year subject requirements in foreign language. Those students are required to complete the 16 academic units with two units from the humanities and/or social sciences in place of the foreign language requirements.

Eligibility Index

The Eligibility Index combines scores on the Scholastic Aptitude Test and high school class rank. Both are considered in determining **MINIMUM** eligibility. Some state colleges, including Worcester State College, have adopted higher eligibility indices than the minimum required by the Board of Regents. Applicants should consult members of the admissions staff for specific details.

Combined SAT score	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	SAT alone
Weighted rank in graduating class														
Rank alone	upper 25 %	30	35	40	45	50	60	65	70	75	80	85	90	

The table shows that applicants in the lower 60% of their class must have a combined SAT score (verbal plus math) of 800 or above to meet the MINIMUM eligibility standards for admission to a state college.

Students who do not meet the admissions eligibility index may be exempt under the following circumstances:

- graduated from high school more than three years ago,
- obtained a GED (high school equivalency certificate),
- graduated from an evening high school,
- designated as a special needs student as defined by Chapter 766 or Chapter 344,
- transferred after receiving an associate degree from a Massachusetts community college and other transfer students who meet the requirements of the campus admissions policy,
- identified as educationally, ethnically, or financially disadvantaged.

Chapter 344, which exempts the developmentally disabled from submitting SAT scores for consideration for college admissions, was amended by advocates for the blind. As a result, the blind and visually-impaired without other disabilities are required to take the standardized college entrance aptitude test (SAT) to gain admission to public baccalaureate institutions.

All applicants should note that admission to the College does not guarantee acceptance to a particular major. Prerequisites, if any, for admission to majors are described in Section 6, Departments and Programs.

The Application Process: Directions for Freshman Applicants

Massachusetts high school students can obtain application forms from their school counselors. Forms may also be obtained from the Admissions Office, Worcester State College, 486 Chandler Street, Worcester, MA 01602-2597 or by calling 508:793-8040. Each applicant must supply the following materials:

1. Proof of graduation from an accredited high school or a high school equivalency certificate. High school students should request an official high school transcript including at least the first marking period of the senior year.
2. Record of the completion of the College Board Scholastic Aptitude Test.

3. Record of the completion of the College Board Student Descriptive Questionnaire.
4. A completed Worcester State College application form.
5. Payment of an application fee: $10.00 for Commonwealth residents, $40.00 for all others.

In addition, applicants seeking Advanced Placement credit rnust arrange to have scores sent to the Admissions Office.

The Application Process: Directions for Transfer Students

Transcripts from colleges previously attended are the primary factor in determining acceptance to the College. To be considered a transfer applicant, a student must have successfully completed at least 12 hours at an accredited college or colleges. The following materials must be supplied:

1. An official transcript of all courses completed at each institution attended.
2. A completed Worcester State College application form (the same form used by freshmen applicants).
3. Payment of an application fee: $10.00 for Commonwealth residents, $40.00 for all others.

To qualify for a degree, the student must complete at least 30 of the last 40 semester hours of credit at Worcester State College. A total of 128 credits is required for the baccalaureate degree. Credits earned elsewhere will be evaluated with respect to curricular requirements of Worcester State College; indication of acceptable transfer courses will be included with the acceptance letter.

Commonwealth Transfer Compact: Throughout public higher education in the Commonwealth, an associate degree from any community college signatory to the Commonwealth Transfer Compact will be honored as a unit and construed as (1) completion of at least 60 hours of work toward a baccalaureate degree; and (2) completion of at least 33 credit hours toward fulfillment of the general education requirements for the baccalaureate degree. All associate degree-holders accepted for transfer under the Compact will be subject to no special requirements beyond those specified as major department and/or graduation requirements for students who originally enrolled in the receiving institution as freshmen.

The Application Process: Directions for Part-Time Students

Students who register for 11 or fewer credits per semester in undergraduate day programs are classified as part-time students. Part-time students are ineligible for on-campus housing and for participation in the athletic program. Applicants for part-time study in day or evening programs should follow the procedures outlined above for admission to the college.

The evening undergraduate program is designed primarily to meet the needs and interests of adult learners and other non-traditional students who pursue study on a part-time basis. The late afternoon and evening schedule of courses offered by the College is especially convenient for students whose job and family commitments prevent enrollment in day programs. Instruction in evening courses is provided by Worcester State College faculty and a complement of qualified adjunct faculty. College faculty also serve as academic advisors and are available during the evening to discuss curricular and other issues related to students' academic progress.

Admission to Non-Degree Programs

Applicants to non-degree programs, including teacher certification programs, must be evaluated by the admissions office and are required to meet certain standards for acceptance. Information may be obtained from the Admissions Office.

Summer Programs

Worcester State College offers a variety of courses, workshops, and institutes during the summer to undergraduate, graduate, and continuing education students. Students who wish to accelerate the completion of requirements for graduation or carry reduced programs of study during the academic year find the summer programs offered by the College especially convenient.

Two six-week sessions—the first beginning in late May and the second beginning in early July—provide intensive enrichment opportunities for students working toward completion of degree requirements and/or upgrading and enhancing professional skills. The summer schedule is usually available in late April. For information, contact the Summer Programs Office.

Summer housing may be available in the Chandler Village apartment complex. For further information, contact the Housing Office at Chandler Village.

ACADEMIC POLICIES AND PROCEDURES

General Requirements for the Baccalaureate Degree

Candidates for a baccalaureate degree must complete 128 semester-hour credits with a 2.0 Cumulative Quality Point Average (QPA) and a minimum 2.0 QPA in the major. To receive a baccalaureate degree from Worcester State College, a student must:

1. complete 30 of the last 40 credits at Worcester State College,
2. earn a majority of credits in the major at Worcester State College,
3. earn a majority of credits in the minor at Worcester State College.

Students completing their degrees within six years must meet the degree requirements of the catalog under which they enter the college. After six years, students are subject to the degree requirements of the catalog in effect for their year of graduation.

Post baccalaureate students at Worcester State College upon completion of all prerequisites to the major and all requirements in the major will receive a letter from the Registrar certifying completion of the second major. Only those students entering the Nursing major will be awarded a second baccalaureate degree upon completion of all prerequisites to the major and all requirements in the major.

Requirements for the Degrees of Bachelor of Arts and Bachelor of Science:

Foundation: All students are required to complete the following foundation requirements:

1. English composition: All students will complete two three-credit courses, ordinarily during the freshman year, unless the Department of Languages and Literature grants an exemption.
2. Basic mathematics: All students will complete one three-credit course, ordinarily during the freshman year, unless the Department of Mathematics and Computer Science grants an exemption.
3. Developmental reading: Freshmen whose admission tests indicate a need for augmented reading skills will complete one three-credit course.
4. Physical education: All students will complete, prior to graduation, either three one-credit courses or one three-credit health or physical education course. (Veterans are exempt from this requirement; ROTC students receive a one credit exemption for each year of ROTC completed).
5. EN 099 and/or MA 099: Students whose test scores indicate the need will be required to take EN 099 and/or MA 099 during the freshman year. These developmental courses carry institutional credit. Institutional credits may not be used to satisfy distribution, minor or major requirements. Nor do institutional credits count toward satisfying the 128 credit requirement for graduation. They do, however, count toward establishing a student's full-time status during the semester for financial aid and other purposes.
6. Constitutions: All students will complete, prior to graduation, a course in which the constitutions of both the United States and Massachusetts are studied (Massachusetts General Laws, Chapter 73, Section 2A). Courses which satisfy this requirement include HI 111 and 112, US History I and II; HI/PO 218 and 219, US Constitutional History I and II; PO 102, Constitutions: US and Massachusetts; and PO 210, American Government.

None of the foundation courses may be taken on a pass/fail basis.

Distribution: To familiarize students with the content and methodology of the subject areas included in a liberal education, the College requires a specified number of credits in the humanities, the social sciences, the fine arts, and the natural sciences and mathematics. Students may select from a broad spectrum of courses in each of these areas. These requirements may be met in any year

of the undergraduate program, but it is advisable to complete them insofar as possible the first two years.

Group I: Humanities

Students will complete 12 credits chosen from the disciplines of English, philosophy, history, foreign languages, and media.

Group II: Social Sciences

Students will complete 12 credits from the disciplines of economics, education, geography, political science, psychology, sociology and urban studies.

Group III: Fine Arts

Students will complete nine credits from the disciplines of art, music, theatre, and photography.

Group IV: Natural Sciences and Mathematics

Students will complete a minimum of 12 credits from the disciplines of biology, chemistry, geology and physical geography, natural science and physics, and mathematics. At least one of the courses must be a laboratory course awarding three or more credits.

In satisfying the 45 credit distribution requirement, the following restrictions must be observed:

1. No course from within a student's major may be used to satisfy any distribution requirement. Students with a double major, however, may apply six credits from the second major toward satisfaction of a distribution requirement.
2. No course used to satisfy a foundation requirement may be used to satisfy a distribution requirement.
3. No student may apply more than six credits in any given discipline within a group toward the satisfaction of a distribution requirement.

Electives: Having met the general requirements and those of the major (and minor, if applicable), a student may elect other courses without restriction to complete the 128 semester hours of credit necessary for graduation. Since the purpose of elective courses is to encourage exploration in diverse fields of knowledge, the student is urged to take advantage of this opportunity to broaden and deepen his or her intellectual development.

Choice of Degree: Students may receive either a bachelor of arts or bachelor of science degree while majoring in any subject except elementary education (see Bachelor of Science in Education below). Provided its programs remain consistent with the general requirements, any department is free to specify requirements in its major and ancillary fields to meet either or both degree programs. The degree is determined by totaling the elective credits in the humanities and sciences, respectively. If a majority fall within the humanities, the student receives a B.A.; if a majority fall within the sciences, a B.S. Subject areas are classified as follows:

Humanities:	art, English, foreign languages, history, media, music, theatre, philosophy.
Sciences:	biology, business administration, chemistry, communication disorders, computer science, economics, education, geography, health,

mathematics, natural science, nursing, occupational therapy, physical education, physics, political science, psychology, sociology, urban studies.

Requirements for the Bachelor of Science in Education Degree

Foundation and Distribution: Each student is required to complete the foundation and distribution requirements as described above.

Major: Students preparing to teach at the level of early childhood or elementary education must complete the professional education requirements specified in the Departments and Programs section of the catalog.

Minor: Every elementary education major must select a minimum of 18 credits in an academic field exclusive of any used to satisfy the distribution requirement.

Electives: Beyond those courses necessary to satisfy the College's general requirements and those of the B.S. in Education program, the student may elect other courses without restriction to complete the 128 semester hours of credit required for graduation.

Grades

The quality of achievement is represented by the following letters:

A, A-	B+, B, B-	C+, C, C-
D+, D, D-	E (Failure)	I (Incomplete)
P (Pass)	F (Fail)	W (Withdrawn)

WP (Withdrawn with a passing mark)
WF (Withdrawn with a failing mark)

Credits: The amount of credit earned in a course is counted in units called semester hours. The number of semester hours carried by a particular course is indicated in the course descriptions section. Twelve to 19 semester hours per semester are considered a full-time schedule of study.

Course Overload: Special permission is needed to enroll for more than 19 hours; forms are available from the Office of the Undergraduate Dean. A student seeking approval of a course overload of more than one course beyond 19 credits must have the approval of the Associate Undergraduate Dean's signature on the course overload approval form in addition to the signature of the student's advisor.

Quality Point Average: The College assigns quality points to each letter grade according to the following scale:

A	4.0	B-	2.7	D+	1.3
A-	3.7	C+	2.3	D	1.0
B+	3.3	C	2.0	D-	0.7
B	3.0	C-	1.7	E	0.0

In addition to the "E" grade (failure), the following grades do not receive quality points: "P" (pass), "I" (incomplete), "W" (withdrawn), "WP" (withdrawn passing), and "WF" (withdrawn failing).

The Quality Point Average (QPA) for a semester is determined by totaling the quality points earned in all courses and dividing that number by the number of credits attempted. At the end of each semester the semester QPA is computed, as well as the cumulative QPA representing the student's academic record to date at the College. **Courses taken on a pass/fail basis are excluded from the computation of the semester QPA and the cumulative QPA.**

The Cumulative Quality Point Average reflects the entire history of the student's college achievement while matriculated at Worcester State College and is computed by averaging the total of all credits attempted by all quality points earned over all semesters. The Cumulative Quality Point Average is a major factor in determining class membership, academic standing, and eligibility for academic honors. **Grades earned prior to a student's matriculation at Worcester State College are not averaged in the cumulative QPA.**

Course Repeat: If a student repeats a course, **the student must file a course repeat form with the Registrar.** Only the higher of the two grades is computed in the cumulative QPA.

Pass/Fail Policy: Students may select no more than two courses per semester on a pass/fail basis. The courses may not be those required to complete major or minor requirements. The foundation courses may not be taken on a pass/fail basis. A student must notify the Registrar's Office at least six weeks prior to the last scheduled day of classes if he or she intends to take a course on a pass/fail basis. Similarly, a student deciding to change from pass/fail status to standard grading must notify the Registrar's Office by the same deadline, six weeks before the final day of classes. No more than 24 credits toward the baccalaureate degree may be taken on pass/fail basis. Pass/fail courses are not computed in the quality point average.

Incomplete (I) Grades: An incomplete grade allows an extension of the time a student has to complete coursework. The professor may give an incomplete grade only when a substantial portion of the course requirements have been completed and valid reason exists for inability to complete all work before the end of the semester. **All incompletes must be resolved within eight weeks after the beginning of the next semester.** Otherwise, the "I" grade automatically becomes an "E" (failure) and is so recorded in the student's permanent record.

Degree and Diploma: Degree and diploma will be granted within 30 days of completion of requirements. All students participating in commencement must have completed all degree requirements. These policies apply to the class of 1985 and all subsequent classes.

Academic Standing, Probation, Dismissal Policy

Academic Standing: A student's membership in a class is determined by the number of semester hours completed. The following guidelines show the hours required for each class:

Class	1st Semester	2nd Semester
Freshman	0 - 15	16 - 29
Sophomore	30 - 45	46 - 59
Junior	60 - 78	79 - 95
Senior	96 - 112	113 - 128

These standards determine one's rank regarding registration priorities and participation in class events.

Good Standing: To be regarded in Good Standing, students must meet the minimum Quality Point Average as specified in the chart below based on the number of credits attempted:

Credits Attempted	Minimum Quality Point Average
1 - 15	1.25
16 - 29	1.50
30 - 63	1.75
64 and over	2.00

Credits attempted include all credits completed at Worcester State College and all college credits accepted in transfer from other institutions. Only Worcester State College grades will be computed in the Quality Point Average.

Academic Probation: Students who fail to meet the minimum Quality Point Average based on the number of credits attempted will be placed on academic "Probation Status." Students will be notified of their academic probation status by the Registrar. Students who are placed on academic probation will be so notified at the end of each semester. Academic probation status will be in effect up to one year. If the student fails to improve and regain Good Standing in that time, he/she will be dismissed from the College.

Removal of Academic Probation: Academic probation students whose academic performance improves so that they meet the Good Standing requirement will be automatically removed from probationary status.

Note: Students who are on academic probation status may not receive financial aid, nor are they eligible to participate in intercollegiate athletics until they regain Good Standing.

Probation Contract: Students on Academic Probation should meet with a member of the advising staff at the Office of the Associate Dean of Undergraduate Studies in order to complete a Probation Contract and receive special academic assistance. Academic Probation status will result in the restriction of the number of credits for which a student may enroll to 12 semester hours. The advisor may also recommend the number of hours of employment and the number of extra-curricular activities. The purpose of the contract is to put the student in early contact with an advisor who will review the student's record and make appropriate recommendations and provide special academic assistance.

Appeal of Dismissal: Students who fail to meet the minimum standards for Good Standing after a year on academic probation may appeal to continue as a student on a second year of academic probation. The appeal must be made in writing to the Associate Undergraduate Dean. The Associate Dean will convene the Academic Progress Review Board to review all appeals and to make decisions on each case. The decision of the Review Board is final. Students who do not regain Good Standing after two years on academic probation will not be allowed to return until one full academic year has elapsed.

Note: The Academic Progress Review Board shall be composed of three faculty members appointed by the All College Committee, the Associate Undergraduate Dean as the chair, and the Registrar.

Declaration of Major

Major: After admission to the College and prior to the beginning of the junior year, a student applies to a specific department in which he or she wishes to major. In general, a major is completed by earning no fewer than 30 and no more than 48 credits with a minimum QPA of 2.0 in the major department or departments. All courses counted towards a major degree are selected under the direction, and with the approval, of the student's faculty advisor in the major department.

Forms for the declaration of a major/minor are available at the academic department offices and/or Academic Advising, S112.

A department may establish standards for admission of enrolled students into major and minor programs. These standards are not based solely on any QPA. They may be based on grades earned in prerequisite courses, demonstration of special knowledge and skills through tests, portfolios, interviews, and other relevant criteria. The department must have standards approved by the All College Committee. A minimum QPA at variance with College policy may not be used as a standard for retention as a major or minor student within a department. Transfer credit within the major must be approved by the major department.

Minor: Although not required for graduation, a minor field may be completed by earning between 18 and 24 credits in a department other than the student's major department. The courses are selected with the approval of a faculty advisor in the minor department.

Changing Major, Minor, Degree or Class: A student wishing to change a major or minor field of study, degree designation or stated year of graduation meets with the advisor during the academic year. No request for changing major or minor field of study or degree designation will be accepted during the scheduled advising period prior to registration. In the case of changing a field of study, the student also meets with the chairperson of the prospective major department. Forms for declaring a major/minor are available at the academic department offices or Academic Advising, S112.

Adding or Dropping a Course: Students may add or drop courses within the first two weeks of the semester. The forms are available at the Registrar's Office. After the add/drop period has passed, students wishing to drop a course must follow the procedure for withdrawal.

Withdrawal from Courses: W, WP, WF. A student may withdraw from a course at any point up to one week after Failure Warnings have been issued. Choosing to withdraw is a serious matter which may affect a student's class standing, full-time status, etc. A withdrawal for extenuating circumstances may be granted by the appropriate academic dean after the six week period. Therefore, a student considering such a step should seek advice from the instructor, the faculty advisor, or the staff of the Academic Advising Office of the College in order to consider all the alternatives and possible effects. To withdraw from a course, a student must obtain a Course Withdrawal Form from the Registrar's Office and follow the prescribed steps. **Mere non-attendance at class does not constitute official withdrawal and may result in a failing grade.**

If a student withdraws from a course before the mid-semester Failure Warnings are issued, a "W" is given. After Failure Warnings are issued, a student may receive a "W" (Withdrawn), "WP" (Withdrawn with a passing grade), or "WF" (Withdrawn with a failing grade). All "W" grades - "W" "WP" "WF" - are permanently recorded on the student's transcript. A student who withdraws from all courses will be considered withdrawn from the College, and must file a formal intent to withdraw with the Registrar.

Withdrawal From the College/Leave of Absence

Students who wish to permanently withdraw from the College or take a leave of absence for a semester must complete appropriate forms in the Registrar's Office.

Permanent Withdrawal: "W", "WP", "WF" are the grades used at the time of withdrawal. No computation in Quality Point Averages will be recorded on the student's permanent record. Should a person decide to return to Worcester State College after having permanently withdrawn, he or she must file for admission as a new student.

Leave of Absence: To preserve his or her position in the College, the student requesting a leave of absence must return on the agreed-upon date. An extension of no more than one semester may be granted. Failure to return on the specified date will necessitate filing for admission as a new student if the student desires to return. "W", "WP", "WF" are the grades used at the time of withdrawal. Inquiries regarding this procedure may be made at the Registrar's Office.

Extenuating Circumstances: Under certain circumstances and at the discretion of the Undergraduate Dean, a student may be granted a temporary leave of absence.

Academic Advising

A student is assigned a faculty member from his or her major department to serve as advisor in the selection of courses, changes in schedule, and all other academic matters. Undeclared majors, students who have not yet decided upon a field of study, are assigned faculty advisors in the Academic Advising Center. Students enrolled in evening programs are assigned academic advisors through that office.

The student meets with the academic advisor during the regularly scheduled advising period each semester to review academic progress and select courses for the coming semester. During the registration period the advisor signs the registration form which the student presents in order to enroll in classes. At other times during the semester, the advisor's signature is necessary to complete forms for adding or dropping courses, or for withdrawing from a course or from the College.

The advisor is kept informed by the Registrar of the grades and the quality points earned by each of his or her student advisees. At any time during the semester the student should contact the advisor whenever information or an opinion on an academic matter is needed.

Faculty advisors must approve all courses taken off-campus.

Independent Study

Guidelines for Independent Study: The following statements are recommended to serve as college-wide guidelines and requirements for ali courses designated Independent Study at Worcester State College.

1. It is generally believed that not all students may profit from Independent Study; therefore, it is suggested that this course be recommended primarily to students of demonstrated interest and ability in the area of the Independent Study.
2. With this in mind, it is recommended that any student desiring to conduct an inquiry or project in a field of interest by Independent Study must select an instructor and with his or her advice prepare a written contract containing the basic idea and direction of the study. The contract should be submitted to the department within the first week of the semester.
3. The department and the instructor will determine whether or not the student will be allowed to conduct this study after evaluating its merits.
4. Based on the instructor's recommendation, the department will also determine the number of credits to be given for the study. One to four hours of credit may be granted for one semester of Independent Study.
5. A copy of the written contract must be filed with the department chairperson, the major advisor and the instructor.
6. A written report of the accomplishments must be made during the semester of study.

Academic Honors

Honors List

Full-time Students: Following the completion of each semester, the names of all students who have enrolled for a minimum of 12 graded credits excluding courses taken on a pass/fail basis and whose QPA for that semester places them in the top 10% of all full-time students appear on the Honors List. The distinction will be listed on the student's transcript.

Part-time Students: Following the completion of each semester, the same criteria for honors for full-time day students will be applied to part-time day and evening students. Students must have an academic load of a minimum of six credit hours excluding courses taken on a pass/fail basis. The names of students whose QPA for that semester places them in the top 10% of part-time students will appear on the list. All lists and publications of names of students will clearly indicate their part-time status and that they are matriculated students.

Graduation Honors: Students graduating with honors must attain the following cumulative QPA based on all credits earned at Worcester State College (minimum of 64 hours for transfer students):

Cum Laude	3.5 - 3.69
Magna Cum Laude	3.7 - 3.89
Summa Cum Laude	3.9 - 4.00

Undergraduate Academic Appeal Procedure

Should a student or professor have reason to question some aspect of the academic process as it involves that student and professor, the following procedure shall be followed:

1. At the request of either party involved, a private consultation shall occur between the student and the professor no later than the end of the second week of the semester following the one in which the question has arisen.
2. If the matter is not resolved to the satisfaction of both parties, a written appeal shall be filed with the chairperson of the department involved within five working days. If the matter concerns a specific course, the department involved shall be that in which the specific course is taught as opposed to the home department of the professor if the two departments are different. Within ten working days of the filing of that appeal, the student, professor and department chairperson shall meet and attempt to resolve the matter. Supporting arguments and documents pertinent to the issue in question must be available to all parties at least two working days prior to the meeting. Witnesses may be called by either the student or the professor, provided that the intention to call witnesses and the identity of each witness is made known at least two working days prior to the meeting. The department chairperson shall preside. If a chairperson is involved in this appeal, the other members of the discipline will elect an acting chairperson for this purpose.
3. If the matter is not resolved to the satisfaction of both the student and the professor, a written appeal setting forth the grounds for the appeal shall be filed with the Undergraduate Dean within five working days. Within ten working days of the receipt of that appeal, the dean shall convene and preside over an appeals committee composed of one additional member of the administration selected by the dean and three members of the faculty, from a discipline other than that in which the course was taught, selected by the faculty members of the discipline in which the course was taught. The decision of that committee will be final. The appeals process ends at this point.

Attendance

All students are expected to attend and participate in all class meetings and laboratory sessions. In the event that illness or some other emergency prevents a student from attending class, the student should contact the instructor directly.

Worcester State College abides by Chapter 375 of the Commonwealth of Massachusetts, **An Act Excusing the Absence of Students for Their Religious Beliefs**. Section 2B of this law states: "Any student in an educational or vocational training institution other than a religious or denominational educational or vocational training institution, who is unable, because of his religious beliefs, to attend classes or to participate in any examination, study, or work requirement on a particular day shall be excused from any such examination, study or work requirement, and shall be provided with an opportunity to make up such examination, study, or work requirement which he may have missed because of such absence on any particular day; provided, however, that such makeup examination or work shall not create an unreasonable burden upon such school.

No fees of any kind shall be charged by the institution for making available to the said student such opportunity. No adverse or prejudicial effects shall result to any student because of his availing himself of the provisions of this section."

Transportation to Practicum Sites: Students are responsible for providing their own transportation for off-campus learning experiences.

Enhanced Learning Opportunities

The following learning opportunities include those sponsored or administered by the College as well as programs in which it participates.

Credit by Examination: In addition to the Advanced Placement examinations administered by the College Entrance Examination Board through the high schools, several other opportunities to challenge subject areas for credit are available.

1. College Level Examination Program (CLEP): These standardized examinations offered on campus through the Educational Testing Service confer college credit in two categories: general examinations, which include English, humanities, mathematics, social sciences, and natural sciences; and examinations in specific subjects. Further information and applications are available through the Counseling and Placement Center.
2. Department challenge examinations: Many departments at the College offer students the chance to request and complete department-made examinations for credit. Consult the appropriate department chair.
3. National League for Nursing (NLN) examinations: The NLN examinations are administered to candidates for the upper division program in nursing. Consult the chair, Nursing Department, for further information.
4. American Chemical Society: Students may challenge Chemistry for the Allied Health Professions by contacting the Chemistry Department, New York Board of Regents. In some cases, credit can be awarded for these examinations.

Internships and Professional Experiences: An internship is a form of experiential learning that permits a student to convert theory into action. An internship may be undertaken with or without the expectation of academic credit. If credit is to be granted, however, the internship must be monitored and evaluated by the appropriate College department and a grade awarded at its completion. The internship can be constructed according to any of a number of models:

1. Professional training: A student serves as an apprentice carrying out assigned tasks under the supervision of a professional in a field such as education, nursing, communication disorders, or social work in order to gain and use the knowledge requisite to the profession.
2. Work experience: Under the sponsorship of a faculty member, a student integrates classroom experience with business, governmental, or service experience in the community.
3. Field research: Undertaking an individual or group investigation in business, government, or community, a student applies the principles and concepts of an academic discipline under the supervision of a faculty member.

4. Career exploration: A student is placed in a supervised position in order to develop job skills and analyze career possibilities.
5. Socio-political action: Under faculty sponsorship a student is directly engaged in working for social change either through community organization, an action research project, or work with existing organizations seeking to bring about societal change.
6. Service learning: Under faculty supervision a student is encouraged to integrate his or her educational growth with a task that meets demonstrated human needs.

Because the student must be involved actively in the development of an internship placement - as by developing a resume, preparing necessary correspondence, and being interviewed - it is desirable that the student contact the faculty sponsor in the semester prior to the proposed internship. The internship contract sets forth the responsibilities of each party so that each understands his or her specific role in the educational field experience. Each program is designed to accommodate and articulate the personal goals of the student, the academic goals of the department, and the needs of the participating off-campus organization. Information about available internships is regularly relayed to, and publicized in, appropriate academic departments.

Contract Learning Program: This program enables juniors and seniors to obtain academic credit for non-classroom experiences which must, however, be learning experiences for the student and related to an academic discipline. A contract learning experience allows the student to apply theory to actual working situations and to gain more information about a field or career. Examples of experiences for which students may receive credit include counseling, newspaper work, environmental engineering, museum work, municipal government study, photography, business management, accounting and early childhood care. The experience may be in connection with a job, volunteer work, or a special project, and it does not have to be related to a student's major. It must be done, however, in conjunction with a business or organization (hereafter referred to as an "outside agency"). A faculty member of the student's choice (hereafter the "faculty sponsor") and the faculty sponsor's department must approve the project.

The student enters into a contract agreement with an outside agency, faculty sponsor, and department to participate in a proposed learning experience for a specified number of credits. The faculty sponsor, after consulting at the end of the semester with the student's immediate supervisor in the outside agency, evaluates the student's achievement on the basis of the terms of the contract. Upon successful completion of the contract, the student is granted the specified credits. No grade is given, but the credits are applied in lieu of elective credits to the total required for graduation. Credits earned through contract learning may not be substituted for specific course requirements.

Any combination of contract credits up to a maximum of 12 may be earned through contract learning. The amount of time involved depends on the nature of the experience and the number of credits to be earned. Contract learning forms are available from the Office of the Undergraduate Dean.

Engineering Science Transfer Program: In cooperation with the University of Lowell and the Worcester Polytechnic Institute, the College offers engineering transfer programs for students interested in obtaining a bachelor's degree in engineering. Students completing the first two years of the program at Worcester State College with a Quality Point Average of 3.0 or above will be guaranteed admission to the University of Lowell as juniors in the Chemical, Civil or Mechanical Engineering Programs. The requirements of this program can be found in Section 6.

The Worcester State College/Worcester Polytechnic Institute Engineering Program is a five year plan (three years at WSC and two years at WPI). Interested students must be full-time freshmen at Worcester State College and must apply to Worcester Polytechnic Institute before March 1 of their freshman year. Accepted students are assigned an advisor at each College. Together the advisors guide the student in the selection of courses to meet the requirements for transfer to Worcester Polytechnic Institute.

Pre-Law Program: A program of preparation for law school is available through the Department of History and Political Science.

Pre-Medical, Pre-Dental, Pre-Veterinary Program: The College offers a program for students interested in preparing for medical, dental, or veterinary studies. Nearly all medical and dental schools require one year each of the following with laboratory: general chemistry, organic chemistry, biology, and physics; in addition many schools require two years of a modern foreign language, one year of English (including composition), and mathematics through calculus. Regardless of major, the student is advised to select CH 120 and 121, General Chemistry I and II; BI 151, General Botany; and BI 152, General Zoology during the freshman year.

A student who is interested in medicine, dentistry, veterinary medicine, optometry, podiatry, or osteopathy should consult both the major advisor and a member of the College Pre-Medical and Pre-Dental Advisory Committee in the Department of Natural and Earth Sciences.

Worcester Consortium for Higher Education: Ten Central Massachusetts colleges, along with a number of other Worcester area organizations, form the Worcester Consortium for Higher Education. In addition to cultural activities, interdisciplinary programs, and other opportunities, the Consortium provides a cross-registration service whereby full-time day students of member colleges may register at no additional cost for one course per semester at another campus. A Consortium shuttle bus provides transportation among campuses throughout the day. Admission into Consortium classes is on a space-available basis. Cross-registration information is available from the College Registrar.

Members of the Consortium, in addition to Worcester State College, are Anna Maria College, Assumption College, Becker Junior College, Central New England College, Clark University, College of the Holy Cross, Quinsigamond Community College, University of Massachusetts Medical School, and Worcester Polytechnic Institute. Among other organizations participating with the Consortium to enrich local college curricula are the American Antiquarian Society, Worcester Craft Center, The International Center, Old Sturbridge Village, radio station WICN, Worcester Art Museum, Worcester Foundation for Experimental Biology, Worcester Historical Society, Worcester Horticultural Society, and Worcester Science Center.

College Academic Program Sharing (CAPS): A student enrolled at any of the nine Massachusetts State Colleges may enroll for up to 30 credits at any other state college without going through formal admission procedures. Credits are automatically transferred to Worcester State College, and the student pays no additional tuition or fees. For further information consult the Registrar.

New England Regional Student Program: The College participates in a regional cooperative program administered by the New England Board of Higher Education. This program, the New England Regional Student Program, offers qualified residents the benefits of in-state tuition plus 25% in certain programs at any New England state university, college, two-year college, or technical institute. The purpose of the program is to expand higher educational opportunities for New England residents by making available on an equal basis those programs not commonly offered at every institution.

Information about the program can be obtained from the Admissions Office of the College, from any guidance counselor, or from the New England Board of Higher Education, 45 Temple Place, Boston, MA 02111.

American Antiquarian Society Seminar: Each year the American Antiquarian Society and five Worcester colleges - Assumption College, Clark University, College of the Holy Cross, Worcester Polytechnic Institute and Worcester State College - sponsor a research seminar at the Society library. The seminar is conducted by a scholar familiar with the Society's extensive early American History collection, and the seminar topic is related to his or her field of research.

Normally two students are chosen from each of the five colleges to participate. The seminar topic and research methods combine several disciplines, and students from a wide variety of majors have participated in this unusual undergraduate opportunity. Further information is available from the Department of History and Political Science.

Reserve Officer Training Corps (ROTC)

Air Force: Worcester State College students have the opportunity to participate in Air Force ROTC through the AFROTC Detachment at the College of the Holy Cross. The Air Force ROTC program is voluntary and open to all students who seek the challenge of being an officer in the United States Air Force upon graduation from college.

The Air Force ROTC academic program includes a one-hour, non-credit course both semesters of the freshman year; a one-hour, one credit course both semesters of the sophomore year; and three-hour, three credit courses each semester of the junior and senior years. The courses cover Air Force organization and history the freshman and sophomore years, and management, leadership, American defense policy, regional studies, and military law during the junior and senior years. Additionally, AFROTC cadets participate in a one and one-half hour military training period each week.

All AFROTC cadets also attend Air Force ROTC field training during the summer between their sophomore and junior years. Cadets are paid while at field training and will receive travel pay to and from the Air Force base hosting field

training. Students participating in the first two years of AFROTC will attend a four-week field training session, while students entering AFROTC during their sophomore year will attend a six week training program.

By participating in AFROTC students can compete for scholarships ranging from two to three and a half years in duration. These scholarships cover tuition, most fees, and textbooks. A monthly tax-free subsistence allowance of $l00 is paid to all scholarship students, and to all non-scholarship cadets in the last two years of the Air Force ROTC program.

To participate in Air Force ROTC students must be United States citizens (or naturalized by the end of their sophomore year), of good moral character, and in sound physical condition. Students interested in Air Force ROTC should write to the Professor of Aerospace Studies, AFROTC Detachment 340, College of the Holy Cross, Worcester, MA 01610-2390, or call (508) 793-3343 for further details and the latest information on scholarship opportunities.

Army: Army Reserve Officer Training Corps (ROTC), available to all Worcester State College students, is offered by Worcester Polytechnic Institute. Fully qualified students completing the entire program will be commissioned as officers in either the United State Army Reserve or the Regular Army.

Four variations of ROTC are available to the student who desires to participate:

1. The traditional four-year program during which the student takes military science courses two semesters per academic year and attends an advanced summer camp between the third and fourth years.
2. The two-year program is designed especially for transfer students from non-ROTC colleges. In this case, students attend a basic summer camp prior to their third year and then continue through their last two years as any other four-year student.
3. The third variation consists of a compressed program for students entering the program in their sophomore year. The required compression involves taking both the first- and second-year military science subjects in the sophomore year.
4. The last option for participation in the program is that the students take military science classes during their junior and senior years, attend a basic summer camp between junior and senior year and attend advanced camp following graduation, being commissioned at the completion of advanced camp.

All students enrolled in the last two years of the program receive a tax-free cash stipend of up to $2,000, payable in monthly increments. Two- and three-year Army ROTC scholarships which pay all tuition, fees and a book allowance are available for students who wish to apply. Members of Army Reserve and National Guard may participate in the ROTC/SMP Simultaneous Membership Program, receiving a reserve officer commission upon successful completion of the military science requirements. SMP cadets remain members of their unit and continue to earn E-5 drill pay in addition to the tax-free stipend of $100 per month through ROTC. Additionally, Massachusetts National Guard ROTC/SMP members receive free tuition at state schools.

For further information on Army ROTC opportunities, consult with the Professor of Military Science, Worcester Polytechnic Institute, 100 Institute Road, Worcester, MA 01609, telephone (508) 752-7209.

Navy: Courses leading to a commission in the United States Navy or Naval Reserve are available for all qualified male and female students at the College of the Holy Cross by means of cross-enrollment through the Worcester Consortium for Higher Education. While technical programs are encouraged, various non-technical disciplines are permissible. There is a two-year as well as a four-year program which requires the completion of one Naval Science course plus a two-hour lab session per semester. These courses are taught by experienced Naval or Marine Corps Officers and, with the exception of introductory courses and the weekly lab session, are fully accredited four-credit courses.

Commissions in the United State Marine Corps or Marine Corps Reserve are also available as an option within the Naval Science Program. The paths followed by Navy and Marine candidates are identical for the first two years of the four-year program. Within the Marine option Marine Corps courses are substituted for the Naval Science courses in the junior and senior years of the program.

Scholarships for periods of two, three and four years are available which pay the full costs of tuition, instructional fees, textbooks, and a subsistence allowance of $100 per month. Summer training sessions afford an opportunity for practical experience and travel. No military obligation is incurred prior to the beginning of the sophomore year. Consult the Professor of Naval Science, NROTC Unit, College of the Holy Cross, Worcester, MA 01610.

3. Graduate Studies

DEGREE PROGRAMS

Master of Science in Applied Mathematics
Master of Science in Biology
Master of Science in Human Service Management
Master of Science in Speech Pathology/Audiology

Master of Education in: Early Childhood Education
Elementary Education
English
Health Education
History
Natural Science
Secondary Education

State Certification Programs*

Consulting Teacher of Reading
School Guidance Counselor
School Principal
Supervisor/Director
Teacher of Children with Moderate Special Needs

Other Programs
Certificate in Adult Education

*Certification programs are under revision. For information, contact the Office of the Dean of Graduate Studies, Worcester State College, 486 Chandler Street, Worcester, Massachusetts 01602-2597; (508) 793-8125.

ADMISSION

The Application Process

Students applying for admission to graduate study must have completed a baccalaureate degree program at an accredited institution with a quality point average (QPA) of 2.75 or higher.

Students may obtain application forms from the Graduate Studies Office, Worcester State College, 486 Chandler Street, Worcester, MA 01602-2597 or by calling (508) 793-8125. Each applicant must supply the following materials:

1. an official transcript from each college and/or graduate school attended; providing evidence that the individual holds a baccalaureate degree from an accredited institution;
2. a completed application form for graduate study along with remittance of the $10.00 application fee;
3. through the Educational Testing Service (ETS), the results of the Graduate Record Examination or Miller Analogies Test.* In the case of individuals from countries in which English is not the language of instruction, the results of the Test of English as a Foreign Language (TOEFL) should be submitted [Only applicants with scores of 500 or higher will be considered for admission.];
4. two current letters of recommendation [recommendation forms are available from the Graduate Studies Office]; and,
5. evidence of completion of applicable departmental requirements.

*Since up to six weeks may elapse between the test date and the receipt of scores, applicants should take the examination well in advance of the application deadline. The Graduate Record Examination is administered at the College six times each year. The Miller Analogies Test is offered at Worcester State College by appointment only. Applicants may call the Graduate Studies Office for information about these examinations and arrangements for completing them.

Application Deadlines

Semester for which applying	**Deadline for submission**
Summer/Fall	March 2
Spring	October 15

All application documents become the property of Worcester State College and will not be returned. Ordinarily, applications received after a deadline will be considered for action the following semester.

DEGREE REQUIREMENTS

In addition to matriculation and general requirements for graduate study, prospective students must meet requirements established for individual graduate programs. Consult Section 6 of this catalog under the appropriate academic

department for more detailed information concerning the requirements of specific graduate programs.

Matriculation: To become a candidate for a degree, a student must formally apply for matriculation and be accepted into a specific program. **Non-matriculated students are advised to apply for matriculation prior to or upon completion of their first two graduate courses.** An applicant accepted as a degree candidate receives confirmation of the decision along with materials pertaining to the completion of degree requirements. Each matriculated student is assigned an advisor in the appropriate discipline.

Residence Requirements: All candidates for the master's degree must complete a minimum of 33 semester hours of credit, all of which must be earned in exclusively graduate-level courses. Only credits for which students have earned a grade of "B-" or higher within a two-year period immediately prior to the date of acceptance are transferable from an accredited institution, including credits earned at Worcester State College. A **maximum** of 12 such graduate credits may be accepted.

Acceptance of transfer credits is the responsibility of the full-time faculty in the relevant discipline in conjunction with the Graduate Education Council. In all instances, no more than 12 semester hours of credit may be earned at any location other than the Worcester Campus of Worcester State College.

All requirements for a graduate program must be completed within six years of the date of admission to a program. Candidates eligible for graduation in a given academic year must signify their intention by completing and submitting an Intent-To-Graduate form no later than March 15. Students who complete degree requirements during the fall or summer should contact the graduate studies office by March 15 if they intend to participate in the May commencement.

Comprehensive Examination: To receive a Master of Science or Master of Education degree, a candidate is required to pass an oral and/or written comprehensive examination in his or her field of concentration. In place of a comprehensive examination the student may elect to complete and defend a thesis in those programs for which such an option is designated. Refer to program descriptions in the Departments and Programs section of this catalog for additional information.

Course requirements for the Master of Education Degree: Candidates for the degree of Master of Education must complete the following education foundation courses: ED 996, Research and Evaluation; ED 997, Advanced Philosophical Foundations of Education; and ED 998, Advanced Psychological Foundations of Education. Fifteen to 18 credits are earned in the student's field of concentration and six to nine credits in approved elective courses.

Independent Study: No more than three semester hours of credit in independent study may be applied to the satisfaction of requirements of any graduate degree program.

ACADEMIC POLICIES AND STANDARDS

Grading System: The grading system for graduate studies employs the letter grades A, A-, B+, B, B-, C+, C, C-, D+, D, D-, E (failure), W (withdrawn), and I (incomplete). Quality points associated with each letter grade and examples of the computation of the quality point average are described in Section 2 of the catalog.

Incomplete (I) grades allow an extension of the time a student is given to complete coursework. The grade may be given only when a substantial portion of the course requirements have been completed and valid reason exists for inability to complete all work before the end of a semester. All incompletes **must** be resolved within eight weeks after the beginning of the next semester. Otherwise, the "I" automatically becomes an "E" and is so recorded in the student's permanent record.

Student Withdrawal from Courses: Official notice of withdrawal from a course must be made on a form available at the Registrar's Office. The official date of withdrawal is that on which the completed form is received by the office. The deadline for withdrawal from a course is the tenth class meeting. A grade of "W" will be recorded in each case of a withdrawal from a course. Failure to attend class meetings does not constitute withdrawal from a course, and the student who merely ceases attending will receive the grade of "E" (failure).

Academic Standing: Matriculated students who do not maintain a QPA of 2.75 or higher will be terminated from the graduate program.

Attendance: Because each class meeting constitutes a substantial portion of the work in an evening or summer course, students are expected to attend all scheduled class meetings. If absent for any valid reason, the student should inform the instructor and arrange to make up classwork and assignments.

Cancellation of Courses: Worcester State College reserves the right to cancel any course for which there is insufficient enrollment. Students who do not transfer into another course must complete appropriate forms in the Graduate Studies Office in order to receive a full refund for a cancelled course. Processing of tuition refunds takes four to six weeks.

Transcripts and Grade Reports: Official transcripts of courses taken at Worcester State College are issued only upon the written request of the student concerned and reflect the student's cumulative academic record. No request for a partial transcript will be honored. The student must request the transcript on a form available in the Registrar's Office and submit the fee of $1 per copy. Requests normally take 48 hours to process. Transcripts including the final grades of a summer session or semester are ordinarily available four weeks after its close.

Grade reports are mailed to students as soon as they are processed. Neither grade reports nor transcripts will be issued to students with outstanding bills.

4. Tuition and Fees

Tuition and fee schedules are presented separately for undergraduate day programs, and evening undergraduate and graduate programs. Certain categories of students may be eligible for tuition exemption scholarships. Information about eligibility requirements can be found in Section 5, Financial Aid.

Undergraduate Day Programs

In addition to the nonrefundable application fee of $10.00 for Commonwealth residents ($40.00 for nonresidents), students must upon acceptance pay a $50.00 nonrefundable tuition deposit that will be credited towards tuition upon matriculation. Students are billed twice during the year, prior to the beginning of each semester. **Payment must be made before the due date specified on the bill**, which is mailed to the student's permanent address. **Enrollment in classes will be cancelled if bills are not paid by the due date.**

Payment may be made by check or money order; the cancelled check serving as the student's receipt. If a student remits payment with a check that is returned because of insufficient funds, he or she **must make any future payments in the form of a certified check, bank check, or money order.** Grades and transcripts will not be issued to students with unpaid obligations. Tuition and fee charges are subject to change, by a vote of the legislature, Board of Regents, or Board of Trustees. Student accounts must be clear prior to the beginning of classes. **Students will incur all costs of collection if the College must place their accounts with a collection agency.**

Tuition Schedule Undergraduate Day Programs*

Status of Student	Residents of Massachusetts	Non-Residents of Massachusetts
Full-time (12 or more credits) per semester	$507.00	$1755.00
Part-time (11 or fewer credits) per credit	$42.25	$ 146.25

*Subject to change for the 1988-89 academic year.

Fees

Full-time students must pay the following fees each semester:

Educational Services Fee	$18.50
Health Service Fee	$10.00
Student Center Fee	$25.00
Athletic Fee	$45.00
Activity Fee	$22.50
Library Fee	$15.00

Part-time Students pay $10.00 per semester hour of credit

The following are payable when applicable:

Orientation Fee	$ 5.00 - first semester of attendance only
Placement Fee	$ 5.00 - first semester of attendance only
Student Teaching Fee	$75.00
Late Registration Fee	$ 5.00
Parking Fee	$ 2.00
MASS PIRG (optional)	$ 5.00
Transcript (per copy)	$ 1.00

Unless otherwise noted, fees are not refundable after the first day of class.

Room and Board

Students residing in campus housing pay $740 for room and $515 for meal plan each semester.

Resident Freshmen and Transfer Students: Resident freshmen and transfer students are required to purchase the meal plan. Upon acceptance as a resident, each student must pay a $50 non-refundable room deposit and a $100 damage deposit as follows:

1. A separate check for $50 submitted to the Admissions Office along with payment of the tuition deposit determined by that office. Payment of this deposit and the resident's receipt of an agreement signed by the College will reserve a space until occupancy.
2. The remaining $100 damage deposit will be billed with room rent.

There is also an additional $100 non-refundable room deposit that is due by June 1, to secure a room for the Fall semester.

A freshman/transfer student accepted as a commuting student at the College may submit to the Admissions Office a $50 room deposit along with a signed Occupancy Agreement Form to be considered for room assignment. The commuting student will be placed on a waiting list until a room becomes available.

Returning Residents: For returning residents the meal plan is optional. Upon acceptance as a resident, each student must pay a $50 non-refundable room deposit and a $100 damage deposit as follows:

1. the returning resident submits the initial $50 room deposit with a signed Occupancy Agreement Form at the time of room selection for the following year.
2. the remaining $100 damage deposit will be billed with room rent.

There is also an additional $100 non-refundable room deposit that is due by June 1, to secure a room for the Fall semester.

Commuting Students: A student accepted as a commuting student at the College may submit to the Residence Hall Office a $50 room deposit along with a signed Occupancy Agreement Form to be considered for room assignment. The commuting student will be placed on a waiting list until a room becomes available.

Refund Policy

Tuition Refunds to Students Withdrawing from the College: Official notice of withdrawal from the College must be made on a form available at the Registrar's Office. The official date of withdrawal is that on which the completed form is received by the Registrar. Tuition refunds will be made according to the following schedule during the 1988-89 academic year.

Fall semester, 1988

Official date of Withdrawal	**Amount of Tuition Refunded**
prior to September 8	Full refund (less $50 tuition deposit for first time students)
September 8 to September 14	Two thirds of tuition
September 15 to September 21	Half of tuition
September 22 to September 28	One third of tuition
after September 28	No refund

Spring semester, 1989

Official date of Withdrawal	**Amount of Tuition Refunded**
prior to January 17, 1989	Full refund (less $50 tuition deposit for first time students)
January 17 to January 23	Two thirds of tuition
January 24 to January 30	One half of tuition
January 31 to February 6	One third of tuition
after February 6	No refund

Room Refunds to Students Withdrawing from Residence Halls: Residents who wish to withdraw from a residence hall prior to occupancy may obtain a refund

of the room fee provided written notice of intention to withdraw is given to the Director of Housing no later than 30 days before the beginning of either Fall or Spring semester and the College is able to fill the vacancy created by the student's withdrawal. A resident who wishes to withdraw from a residence hall during, or at the end of a semester may receive a pro rata refund of the room fee provided written notice is given to the Director of Housing prior to withdrawal and the College is able to fill the vacancy. Such pro rata refund shall be determined from the date of occupancy by the resident filling the vacancy.

It is the policy of the **Board of Trustees** of State Colleges and of each of its member State Colleges, effective **September 20, 1979**, that students or former students of any of the State Colleges who are listed by the financial office of said State College as having **unpaid debts** for tuition, room, board, medical or other College-related charges where said debts have not been discharged by operation of law or where deferred payment of said debts has not been agreed to by said College will not (1) be awarded any degree to which said students might be entitled; (2) be permitted to register for any program at any State College for which said student might otherwise be eligible; and (3) be furnished a certified copy of any State College transcript (unless said transcript is needed to obtain any benefits related to service in the United States Armed Forces) although said students will be entitled, upon written request, to review uncertified copies of their transcripts.

Evening Undergraduate and Graduate Programs

Tuition is $55 per semester hour of credit for Massachusetts residents, $63 per credit for non-residents. Tuition is payable at the time of registration and may be made by bank check, money order, personal check, or credit card (MasterCard or Visa); cash will not be accepted.

Fees

All students are obliged to pay the following non-refundable fees, when applicable:

Application	$10
Registration	$20 (per semester)
Late registration (per class held)	$10
Change of registration/status (per course)	$ 2
Library (Fall and Spring Semesters)	$12 (per semester)
Library (Summer Sessions I and II)	$10 (per session)
Student Center (Fall and Spring Semesters)	$10 (per semester)
Student Center (Summer Sessions I and II)	$ 5 (per session)
Parking	$ 2
Commencement (degree candidates)	$15
Placement (degree candidates)	$ 5
Transcript (per copy)	$ 1

Refund Policy

Refunds of tuition are based on the number of scheduled class meetings (not the number of classes attended), and are prorated accordingly:

Withdrawal prior to first class meeting	100%
Withdrawal prior to second class meeting	90%
Withdrawal prior to third class meeting	80%
Withdrawal after third class meeting	No refund

5. Financial Aid

General Information

All students are encouraged to apply for financial aid to help meet the cost of education. To receive financial assistance from the College, students must be enrolled (or accepted for enrollment) in a degree-granting program or certificate program at Worcester State College; and must be in attendance at least half-time unless otherwise restricted by the specific financial aid program. Students must meet all eligibility requirements and must be in good academic standing at the College as defined on page 25.

Financial aid is awarded to students with demonstrated financial need. Financial need is defined as the amount by which the total cost of college attendance (including reasonable costs for room, board, transportation, and other personal expenses) exceeds the expected family contribution.

Complete information on financial aid programs, eligibility requirements and determination, application procedures, the financial aid award process and payment of financial aid is contained in the College's Financial Aid Resources brochure. This publication may be obtained by writing to the Financial Aid Office or by calling (508) 793-8056.

Application Process: All students applying for financial assistance must file a Financial Aid Form (FAF) with the College Scholarship Service, CN 6311, Princeton, New Jersey, 08541. The CSS code number for Worcester State College is 3524. The FAF may be obtained through any high school guidance office or through the Financial Aid Office. It takes approximately four to six weeks for CSS to process an application and forward its analysis to the College and other agencies.

Upon request, the Financial Aid Office will send to applicants a Worcester State College Financial Aid Application to be completed and returned to the College. Each applicant also must submit a copy of her/his federal income tax return (and her/his parents' federal income tax return, if a dependent) for the calendar year preceding the year for which financial aid is sought. An applicant or parent who will not file a federal income tax return must submit a Taxable Income Statement for Non-Tax Filers, available upon request from the Financial Aid Office. The applicant must document all sources of untaxed income received by her/his household. An applicant who has attended any postsecondary institution prior to enrollment at the College must submit a Financial Aid Transcript from each such institution previously attended. An applicant who is an eligible noncitizen must submit acceptable proof of residency status.

All applicants for financial aid **must** apply for the Pell Grant. Application may be made by using the CSS Financial Aid Form or the Application for Federal Student Aid, available from the Federal Student Aid Information Center, P.O. Box 84, Washington, DC 20044. All applicants must submit the Pell Grant Student Aid Report (SAR) to the Financial Aid Office; the SAR is a required document for the basic file.

All applicants are expected to apply for any scholarship assistance awarded by the state in which they legally reside. Residents of Massachusetts may apply for the Massachusetts State Scholarship by checking the appropriate box on the Massachusetts Financial Aid Form (MFAF) or by listing the Massachusetts State Scholarship Program (code 0558) on the Financial Aid Form (FAF). Residents of other states should consult with their high school guidance office or the Financial Aid Office for information on how to apply for state scholarships.

Financial aid is not automatically renewable; candidates must reapply each year, following the application procedures described above. The amount and type of aid offered may change according to the funds available to the College and specific program regulations and guidelines.

Deadlines:

March 15	recommended filing deadline for the Financial Aid Form for all students who wish to be considered for financial aid from the College for the following academic year.
April 15	deadline for submission of all completed forms (except the Pell Grant Student Aid Report) to the Financial Aid Office for students seeking financial aid for the following academic year.
May 1	priority deadline for applying for the Massachusetts State Scholarship.
May 15	deadline for submission of the Pell Grant Student Aid Report for students seeking financial aid for the following academic year.
October 1	deadline for submission of all completed forms (except the Pell Grant Student Aid Report) to the Financial Aid Office for students seeking financial aid for the following Spring semester only.
November 1	deadline for submission of the Pell Grant Student Aid Report for students seeking financial aid for the following Spring semester only.

Applications will be accepted after these dates; however, the availability of funds for eligible students who apply late is not guaranteed. Further, the College cannot guarantee that it will be able to determine an applicant's eligibility for financial aid before the due date for payment of semester charges for any applicant whose financial aid file is completed after the deadline. Consequently, late applicants must be prepared to pay charges, in full, by the due date for the semester.

Verification: The College currently verifies 100% of financial aid applications received to ensure that students and their parents have accurately reported the information used to determine eligibility for financial aid. The College will notify applicants in writing if additional information is required or if changes have to be made to update original information. Applicants are asked to submit requested information within 30 days of the date of request. Failure to respond to verification-related requests may result in the loss of financial aid for a semester or academic year and/or referral of application material to the U.S. Department of Education for review.

Financial Aid Programs and Resources

Listed below are the federal, state-sponsored and institutional financial aid programs in which the College currently participates. Included in this list are scholarships, grants, loans, employment opportunities and payment plans available to eligible students. Unless otherwise indicated, programs are available to students enrolled at least half-time in an undergraduate, graduate or certificate program.

Grants and Scholarships

Pell Grant: Eligibility for this grant is determined by the federal government; it is available only to undergraduate students who have not received a first bachelor's degree by July 1 preceding the award year.

Supplemental Education Opportunity Grant Program (SEOG): Eligibility for these federal funds is determined by the College. It is available only to undergraduate students. Priority is given to students with exceptional need.

Massachusetts State Scholarship-General (MSS): Eligibility for this grant is determined by the Scholarship Office of the Board of Regents of Higher Education. It is available only to needy undergraduate students who are registered full-time.

Massachusetts State Scholarships-Other: The Scholarship Office of the Board of Regents of Higher Education sponsors several grant programs for selected Massachusetts residents who are enrolled as full-time undergraduate students. Contact the Scholarship Office, Board of Regents of Higher Education, 150 Causeway Street, Room 600, Boston, MA 02114, for information on how to apply.

Honor Scholarship: Full tuition is awarded to four entering freshmen with the highest scores on the Scholastic Aptitude Test of those taken in each Massachusetts senatorial district. Students must be enrolled full-time at public four-year institutions. Application is made by indicating on the November or January SAT score sheet that the Massachusetts Board of Regents (code 0558) should receive the test results.

Fire/Police/Correction Scholarship: Provides full tuition to any student whose parent's death occurred in the line of duty as a police, fire, or correction officer.

War/MIA Orphans Scholarship: Provides up to $750 to assist with educational expenses at selected postsecondary institutions, as determined by the Board of Regents of Higher Education.

Commonwealth Scholars Grant: Provides $1000 (nonrenewable) to selected high school seniors who will attend a college or university in Massachusetts. Contact the high school guidance office for application information.

Christian A. Herter Memorial Scholarship Program: Provides a scholarship of up to 50% of the recipient's total annual budget for study at the college of her/his choice. Twenty-five awards are made to high school sophomores and juniors who have a combination of high financial need, difficult personal circumstances and promise for postsecondary work. Candidates are nominated by their high school or a community agency.

Paul Douglas Teacher's Scholarship Program: This federally funded, state-administered program provides up to $5000 per academic year (not to exceed the cost of attendance) to academically qualified students interested in teaching at the preschool, elementary or secondary level. Priority for awards is given to recent high school graduates.

Christa McAuliffe Teacher Incentive Grant Program: Provides grant assistance to juniors or seniors in Massachusetts colleges and universities who agree to teach in the Massachusetts public education system upon graduation. Awards are $1000 for students attending a public college or university and $2000 for students attending a private college or university. Contact the Financial Aid Office in October for applications and deadline information.

Massachusetts Part-Time Grant Program (MAPTG): Eligibility for this state-funded grant is determined by the College. The program provides assistance to undergraduate students who are legal Massachusetts residents and who are enrolled in at least three but fewer than 12 semester hours of credit during each semester. Eligibility for part-time graduate students, nondegree students and special students is restricted to a total of 15 credit hours taken on a part-time basis.

Massachusetts Adult Learner Grant Program (MAAL): Eligibility for this state-funded grant is determined by the College. It is available to students enrolled for at least three semester hours of credit who do not have a Bachelor's degree or equivalent; nondegree and special students may be considered for awards. Priority is given to legal Massachusetts residents who are eligible to receive AFDC benefits.

Other State Grants: Students should contact the appropriate agency in the state where they legally reside for information on grant assistance. Students from Connecticut, Maine, Maryland, New Hampshire, Pennsylvania, Rhode Island, Vermont and the District of Columbia may be eligible to receive a state scholarship from their respective state for study at Worcester State College.

Army/Navy/Air Force ROTC Scholarships: This program provides financial assistance to outstanding students in the undergraduate programs. Contact the Counseling and Placement Office for additional information.

Loans

Perkins Loan Program: Eligibility for this federally-funded loan is determined by the College. It provides long term, low interest loans to students. (Formerly known as the National Direct Student Loan (NDSL) Program.)

Guaranteed Student Loan Program (GSLP): This is a federally subsidized program whereby banks and other lending institutions make long term, low interest loans to students. Eligibility is determined by the lender. Students must have completed a financial aid file before their GSLP application will be processed.

Parent Loan for Undergraduate Students (PLUS): Parents of eligible dependent students can obtain PLUS loans through banks or other lending institutions regardless of parental income, subject to review of credit worthiness by the lender. A PLUS Loan may also be a financing alternative for families who may not qualify for financial assistance from other sources.

Supplemental Loan For Students (SLS): The SLS program is available to self-supporting undergraduate and graduate students. The terms and conditions of the SLS are similar to the PLUS loan.

TERI Supplemental Loan: Administered by The Education Resources Institute, this variable interest rate loan is available to the student's family to assist in meeting college costs. The applicant (student or parent) must demonstrate credit worthiness. Contact TERI toll free at 1-800-255-TERI.

The Family Education Loan Program: Administered by the Massachusetts Education Loan Authority, this fixed interest rate loan is available to the student's family to assist in meeting college costs. The applicant, who is someone other than the student, must demonstrate credit worthiness. Amounts borrowed each year may range from $1500 to the cost of attendance less other financial aid received.

Employment

College Work Study Program (CWSP): This program provides federally subsidized work opportunities on campus for eligible students who wish to finance a portion of their educational expenses through employment.

Employment Opportunities on Campus: Many students earn money through employment at the various offices in the College. Applications may be obtained from the individual departments.

Tuition Exemption Scholarships

Unless otherwise indicated, students eligible for a remission of tuition from any of these programs should request the appropriate form(s) from the grantor and present the completed eligibility certificate to the Bursar's Office by the due date for payment of charges each semester.

Worcester State College Tuition Waiver: Waivers of full or partial tuition are available to needy, undergraduate day students who are legal Massachusetts residents. Preference is given to students enrolled full-time. The maximum waiver may not exceed the actual tuition charge for the semester. Other waivers and/or tuition exemptions are deducted from the student's bill before eligibility for this waiver is determined. Students must complete a financial aid file and comply with other requirements for financial aid applicants. Tuition waivers are awarded by the Financial Aid Office, subject to annual authorizations by the Board of Regents of Higher Education.

Project Concern: This program is available to unemployed Massachusetts residents who have exhausted (or nearly exhausted) unemployment benefits. Full tuition and fees are exempted for undergraduate day students. Full tuition only is exempted for undergraduate evening students and for graduate students. Application forms are available at the Bursar's Office.

Tuition Exemption for the Elderly: This program is available to Massachusetts residents who are 60 years of age or older. Full tuition and fees are exempted for day students. Full tuition only is exempted for evening students. Qualified persons should indicate their eligiblity for this program at the time they apply for admission to the College.

State Employees' Tuition Exemption: Full or partial tuition remission is available to eligible state employees and their legal dependents. Eligible persons should contact the Personnel Office at their place of work for information and certification forms.

Police and Fire Department Education Scholarships: A tuition exemption scholarship is available to any regular member of the police or fire department of a city or town of Massachusetts. Appropriate certificates and credentials must be submitted to the Bursar's Office. (Massachusetts General Laws, Chapter 73, Section 20.)

College Academic Program Sharing (CAPS): Students enrolled as day students at Worcester State College who participate in the CAPS program are exempted from tuition and fees at the "guest" institution. Students who take courses at Worcester State College as day students through the CAPS program receive a tuition and fees exemption from the College. Additional information is available at the Registrar's Office.

Worcester Consortium for Higher Education: Students enrolled as day students at Worcester State College who participate in the Consortium program are exempted from tuition and fees at the "guest" institution. Students who take courses at Worcester State College as day students through the Consortium program receive a tuition and fees exemption from the College. Cross registration information is available at the Registrar's Office.

Massachusetts National Guard Education Scholarships: A 100% tuition remission is available to any member of the Massachusetts Army or Air National Guard, renewable annually. (Massachusetts General Laws, Chapter 33, Section 137.)

Massachusetts Vietnam Veterans' Scholarships: A tuition exemption scholarship is available to any eligible veteran with service credited to the Commonwealth of Massachusetts who served a minimum of 90 days between August 5, l964 and May 7, l975, or who served 180 days between February 1, 1955 and August 4, l964 and whose discharge was other than dishonorable. Recipients must be day or evening students who are enrolled in an undergraduate, graduate or certificate program. (Massachusetts General Laws, Chapter 601, 1966; and Chapter 842, 1977, Sections 1,2, and 3.)

Other Resources

Veterans' Benefits: The Veterans' Administration has approved Worcester State College for graduate and undergraduate study for the purpose of receiving Veteran's Educational Benefits. Eligible students should submit a copy of Form DD-214 to the Special Student Services Office at the College.

G.I. Bill Benefits: Persons who think they may qualify for Educational Benefits should contact the Special Student Services Office at the College.

Employment and Training College Program (ET): The Massachusetts Department of Public Welfare and the Board of Regents of Higher Education have established a program to provide financial assistance to residents of Massachusetts who apply for or receive public assistance benefits. Participants must apply for financial aid. However, the Department of Public Welfare will compensate the College for up to two courses and books for students who do not qualify for financial aid. Contact the ET College Advisor in the Counseling and Placement Office for further information.

Tuition Payment Pians: Monthly payment plans through external agencies are available for families who wish to avoid a large outlay of cash at the beginning of each semester. For further information, contact the office of the Treasurer.

Worcester State College Academic Scholarships

The Worcester State College Scholarship Program grants awards to full-time undergraduate students who demonstrate scholarly excellence, as evidenced by a minimum QPA of 3.0 or a minimum high school average of B (unless otherwise indicated for a specific award). Both entering and currently enrolled students may apply. The academic scholarships available at Worcester State College are awarded either for the academic year or for a semester only. Scholarships typically provide full or partial tuition. Because financial need is a consideration for some, but not all, of these scholarships, academic scholarship applicants are encouraged to complete a financial aid application with the College (see page 46). The amount of the scholarship will be applied directly to the student's tuition bill through the Bursar's Office.

Application Process: Applicants for academic scholarships awarded by the College must submit a Worcester State College Scholarship Application, which is available upon request from the Financial Aid Office. A statement of academic achievements and extracurricular activity must accompany the application. In addition, the applicant must provide three letters of reference (from faculty, staff, community leaders, employers or other persons able to comment on the applicant's scholastic abilities) in support of the scholarship application. All secondary and postsecondary transcripts of academic work completed must be on file at the College. Scholarship candidates who are entering students must complete all the requirements for admission by the scholarship application deadline. All application materials must be submitted to the Financial Aid Office.

Academic scholarships are not automatically renewable; candidates must reapply each academic year, following the application procedures described above.

Deadlines:

April 1	deadline for receipt of application materials for students applying for Worcester State College academic scholarships for the following academic year.
December 1	deadline for receipt of application materials for students applying for Worcester State College academic scholarships for the following Spring semester only.

Academic Scholarships Available: Listed are the scholarships which are currently available at the College. Specific awards and stipend amounts are subject to the availability of funds and may be changed without notice.

Worcester State College/Board of Regents Academic Tuition Waivers: Priority for full and partial tuition remission is given to entering freshmen who will be enrolled as full-time undergraduate day students and who have combined SAT scores of 1000 or better. Currently enrolled students and candidates for renewal must attain a minimum QPA of 3.3 for 12 hours of coursework completed each term.

Worcester State College Presidential Scholarships ($500 per semester)**:** Available to new and current students who are enrolled full-time at Worcester State College. Awarded for academic excellence, as evidenced by a minimum QPA of 3.3 or its equivalent.

Worcester State College Designated Scholarship ($500 per semester)**:** Awarded to a freshman student from Worcester who attained a high school average of at least B+.

Worcester State College/Massachusetts Regents Scholarships ($500 per semester)**:** Awarded for academic achievement and community involvement, as evidenced by unpaid service within either the College community or the broader civic community. Service in student government organizations, clubs, civic groups, community volunteer work, etc. must be documented and submitted with the scholarship application. Additionally, at least one of the three recommendations must be from an individual who supervised your extracurricular activity. Less than full-time students may also be considered for these awards.

Alumni Scholarship ($500 per semester)**:** Priority is given to a new or enrolled student at Worcester State College who is the daughter or son of a Worcester State College graduate.

Bilingual Special Education Scholarship (full tuition waiver)**:** Awarded to one full-time minority student who is outstanding in a language other than her/his native language, who has financial need and who has a minimum QPA of 3.3 or its equivalent.

Olive Lutz Borgatti Scholarships ($300 per semester)**:** Awarded to two students who are sophomores, juniors or seniors, who have a minimum QPA of 3.5 and who demonstrate financial need and leadership ability, as evidenced by participation in College activities outside of the classroom.

Blanche Marcus Carnam Memorial Scholarship ($500 per semester)**:** Awarded to a female student in the Department of Mathematics and Computer Science who has a strong career interest.

Elder Advocates' Intergenerational Scholarship ($250 for the Spring Semester only): Awarded to a junior or senior who demonstrates interest in an intergenerational approach to meeting the challenges of our aging society; qualifying essay required.

Hiatt Scholars ($500 per semester)**:** Awarded to five students who are juniors or seniors in the Nursing Department and who have financial need, demonstrated knowledge, competence and sensitivity to health needs of people.

George T. Joseph Scholarship ($300 for the Fall semester only): Priority is given to a married student who has financial need.

Aileen D. Kelly Memorial Scholarship ($500 per semester)**:** Awarded to a student who is a junior or senior registered nurse enrolled in the Nursing Department and who has a strong career interest and evidence of potential for future accomplishment.

Ada Cheever Perry Memorial Scholarships ($200 per semester)**:** Awarded to four students who are juniors or seniors, who are U.S. citizens and who have a major in Chemistry, Computer Science, Nursing, or Management, or who have a minor in Secondary Education; candidates must have a minimum QPA of 2.7 and must demonstrate financial need.

Quota Club of Worcester Scholarships ($400 for the Fall semester only): Awarded to two female students who are seniors majoring in Communication Disorders, who have a minimum QPA of 3.25, who demonstrate financial need and who have demonstrated ability to work with the speech-handicapped and/or hard of hearing.

Ruth Sniederman Memorial Scholarship ($400 per semester)**:** Awarded to a student majoring in Media who demonstrates strong career interest and potential for future accomplishment.

Sara Ella Wilson Scholarship ($250 per semester)**:** Awarded to a Black student who is a resident of Worcester or Worcester County and who has financial need. (Formerly known as the Martin Luther King Scholarship.)

Title IV Program Refund Policy

The federal financial aid programs at the College are funded through Title IV of the Higher Education Act of 1965 as amended. These programs are Pell Grant, Supplemental Educational Opportunity Grant, College Work-Study, Perkins Loan, Guaranteed Student Loan, Parent Loan for Undergraduate Students, and Supplemental Loan for Students.

The refund policy in effect at Worcester State College has been formulated in accordance with established federal regulations governing these financial aid programs. A copy of the complete text of the refund policy is available upon request from the Financial Aid Office.

If you withdraw from school and are entitled to a tuition refund, the college is required to refund to its federal financial aid accounts a portion of that refund if you used your financial aid award to pay your college bill. If a Guaranteed Student Loan was applied to the bill, a portion of your refund may be returned to the bank from which you borrowed and will be used as a prepayment on your loan account there. Contact the Director of Financial Aid for details regarding the calculation of the amount of your refund which will be returned to the federal aid accounts. Refunds shall be applied to the Title IV programs in the following order: Perkins, SEOG, Pell, GSL.

If you withdraw after receiving a cash/check disbursement of any portion of your financial aid (except College Work-Study and Guaranteed Student Loans), the college must determine if you were paid more than you needed to meet expenses while you were enrolled. If your disbursement exceeds your need, a portion of that overpayment must be returned to the college's federal financial aid accounts. Contact the Director of Financial Aid for details regarding the calculation of the amount you would be required to repay to the federal aid

accounts. Refunds shall be applied to the Title IV programs in the following order: Perkins, SEOG, Pell. If you withdraw after the eighth week of a semester, the college considers that all the funds disbursed to you have been used to meet your expenses.

If you withdraw **prior** to the disbursement of any financial aid to your account or to you directly, the college will recalculate your eligibility for financial aid using a prorated budget and family contribution based upon your actual period of attendance. Your financial aid award will be revised if it is determined to exceed your adjusted need. Contact the Director of Financial Aid for details regarding the calculation of your revised financial aid award. Funds will be rescinded in the following order: GSL, Perkins, SEOG, Tuition Waiver (need-based), state grant, state scholarship, Pell.

6. Departments and Programs

Business Administration and Economics

Chair: Hartwig

Business Administration
Economics

Business Administration

Professors: Bornfriend, Downey, Farrey, Hartwig, Juralewicz, Masterson, Stefanini
Associate Professor: Joyal
Assistant Professors: Jain, McEachern, Moore, Swanson

The business administration program enables participants to acquire competencies necessary to manage the human, financial, and technological resources of organizations. The major in business administration offers eight concentrations: management, accounting/finance, human resource development, production/operations management, marketing, public administration, health administration, and labor studies-labor relations.

Admission Requirements: Application to the department after completion of the following prerequisite courses:

MA 110	College Algebra
MA 250	Introduction to Statistics I
EC 100	Introduction to Macroeconomics
EC 101	Introduction to Microeconomics
CS 120	Microcomputer Applications in Business I
EN 253	Business Communications

The criteria for acceptance are: performance in prerequisite courses (C average), business experience or demonstration of special knowledge, and unusually high motivation to succeed in management.

Requirements for a Major in Business Administration: 48 credits

Common Management Core: 36 credits

Lower Division

BA 100	Introduction to Business
BA 110	Fundamentals of Accounting I
BA 111	Fundamentals of Accounting II
BA 200	Management and Organizational Behavior
BA 250	Application of Analytical Managerial Techniques

Upper Division

BA 305	Organizational Dynamics
BA 310	Managerial Accounting or BA 374 Cost Accounting
BA 312	Operations Management I
BA 316	Financial Management
BA 318	Principles of Marketing
BA 480	Current Challenges to Management
BA 490	Administrative Strategy Formulation & Implementation

Other upper division business administration courses: 12 credits

Requirements for a Major in Business Administration, Concentration in Management: The Common Management Core together with four additional courses chosen with the assistance of the advisor.

Requirements for a Major in Business Administration, Concentration in Accounting/Finance: The Common Management Core together with four additional courses in the field of accounting and finance chosen with the assistance of the advisor.

Requirements for a Major in Business Administration, Concentration in Human Resource Development: The Common Management Core together with four additional courses in the field of human resource development chosen with the assistance of the advisor.

Requirements for a Major in Business Administration, Concentration in Production/Operations Management: The Common Management Core together with four additional courses in the field of production and operations management chosen with the assistance of the advisor.

Requirements for a Major in Business Administration, Concentration in Marketing: The Common Management Core together with four additional courses in the field of marketing chosen with the assistance of the advisor.

Requirements for a Major in Business Administration, Concentration in Public Administration: The Common Management Core together with four additional courses in the field of public administration chosen with the assistance of the advisor.

Requirements for a Major in Business Administration, Concentration in Health Administration: The Common Management Core together with four additional courses in the field of health administration chosen with the assistance of the advisor.

Requirements for a Major in Business Administration, Concentration in Labor Studies-Labor Relations: The Common Management Core together with four additional courses (two in Economics, two in History) chosen with the assistance of the advisor.

Admission Requirements for a Minor in Business Administration: Application to the department after completion of the prerequisite courses. The criteria for acceptance are: performance in prerequisite courses (C average), business experience or demonstration of special knowledge, and unusually high motivation to succeed in management.

Requirements for a Minor: Business Administration prerequisite courses and 24 credits as follows:

BA 100	Introduction to Business
BA 110	Fundamentals of Accounting I
BA 111	Fundamentals of Accounting II
BA 200	Management and Organizational Behavior
BA 250	Application of Analytical Managerial Techniques
BA 305	Organizational Dynamics
	or
BA 312	Operations Management I
BA 316	Financial Management
BA 318	Principles of Marketing

Economics

Professors: Choi, Kelley
Associate Professor: Trimby

Economics offers a major program for those students who wish to prepare for careers as economists in various governmental agencies, non-profit and industrial organizations, and academic institutions. Since it is frequently necessary to obtain additional training to qualify as a professional economist, the major program is designed to prepare students for such advanced study. Omicron Delta Epsilon, the national honor society in economics is available to outstanding students.

Requirements for a Major in Economics: 33 credits

EC 100	Introduction to Macroeconomics
EC 101	Introduction to Microeconomics
EC 200	Macroeconomics
EC 201	Microeconomics
EC 207	Statistics (or any acceptable statistics course)

One of the following courses:

EC 305	Introduction to Mathematical Economics
EC 306	Introduction to Econometrics (or a course in which calculus is one of the primary topics taught)

The remaining 15 (or more) credits may be chosen from economics electives in accordance with special interests and career objectives.

Requirements for a Minor: 18 credits

EC 100	Introduction to Macroeconomics
EC 101	Introduction to Microeconomics

Any four additional economics courses

Requirements for a Major in Economics, Concentration in Labor Studies/Labor Relations: All courses required for the major, plus:

EC 202	Labor Economics
EC 311	Economics of Human Resources
BA 200	Management and Organizational Behavior
BA 305	Organizational Dynamics

Two of the following:

HI 208	American Immigrant History
HI 216	Economic History of the United States
HI 249	United States Labor History I
HI 250	United States Labor History II

Students are encouraged to take an internship if their program permits.

Communication Disorders

Chair: Rezen
Professors: Cohen, Lysaght, Rezen
Associate Professors: McLaughlin, Power

Communication Disorders majors receive training in the normal processes of speech, language, and hearing and their associated pathologies. Then, with this sound theoretical basis, the student participates in evaluation, diagnosis, and rehabilitation of children and adults with communication problems. This program emphasizes the blending of theoretical and practical skills through solid academic and clinical training.

Admission Requirements: Students must complete the following, earning a grade of C+ or better, before admission to the major:

CD 100	Introduction to Human Communication and Its Disorders
CD 105	Phonetics
CD 110	Anatomy and Physiology of Speech and Hearing
CD 115	Normal Development of Speech and Language
CD 200	Introduction to Speech and Hearing Science

Students will be screened for adequate speech and language patterns and recommendations made for therapy, when appropriate. Students must petition the department for admission to the program.

Requirements for a Major: 39 credits

The five courses listed above and

CD 205	Audiology
CD 210	Language Disorders
CD 215	Voice and Articulation Disorders
CD 300	Rehabilitation of the Auditorily Impaired
CD 305	Rhythm Problems and Allied Disorders of Speech

CD 310	Speech Language Practicum I
CD 400	Speech Language Practicum II
CD 405	Aural Rehabilitation Practicum

Requirements for a Minor: 18 credits within the department

Graduate Program

This program is accredited by the American Speech Language Hearing Association and approved by the Massachusetts Bureau of Teacher Certification.

Admission Requirements: Students must meet general admission requirements and have adequate Graduate Record Examination or Miller Analogies Test scores. In addition, students must have completed courses in Introduction to Human Communication and Its Disorders, Phonetics, Anatomy and Physiology of Speech and Hearing, Normal Development of Speech and Language, Introduction to Speech and Hearing Science, Audiology, and Child Development with a final grade of C+ or better in each course.

Requirements for a Master of Science in Speech Pathology: Students must complete:

CD 920	Articulation Disorders
CD 921	Language Disorders in Children
CD 922	Language Disorders in Adults
CD 927	Clinical Audiology
CD 928	Aural Rehabilitation Theory
CD 940	Diagnostic Evaluation: Methods and Procedures
CD 980	Research in Communication Disorders
CD 985	Seminar in Speech Pathology
CD 990	Clinical Practicum in Speech Pathology
MA 900	Statistical Techniques for Business, Liberal Arts, Nursing and the Sciences

Three departmental electives (9 credits)

In addition, students must demonstrate competence in a foreign language or computer science or American Sign Language. If courses in Computer Science and American Sign Language are taken outside of Worcester State College, the student must also pass a competency exam given at the College. If courses are taken at Worcester State College, no separate competency exam is required, but students must earn a grade of at least C.

Education and Human Resources

Chair: Harris

Education
Urban Studies

Education

Professors: Bunuan, Dowling, Harris, Johnson, Meegan, Osborne
Associate Professors: Aisiku, Binstock, O'Neil, Quist, Sussman
Assistant Professor: Fischer-Juralewicz

The Department of Education and Human Resources offers a wide range of programs for public and human service careers. Students can become credentialed to teach in preschool day care, or certified to teach in elementary or secondary schools. Through the Urban Studies major, students are prepared for careers in social work, youth services, or gerontology. The presence of toddlers and elders on campus reflects the range of department programs and the blending of classroom and field work approaches. Graduate programs provide opportunities for students to prepare for careers in human service management or education—as early childhood, elementary or secondary teachers, guidance counselors, reading specialists, special needs teachers, and school supervisors or administrators.

Beginning in the fall of 1989, all students seeking teacher certification must have a liberal arts or science major in conjunction with the appropriate certification program. The Early Childhood and Elementary Education majors will be reduced to certification programs to conform with new teacher certification regulations effective with the class of 1993.

Early Childhood Education Major Teacher Certification Program

The current Early Childhood Education major—in effect for students entering in the fall of 1988—prepares the candidate for state certification as a teacher of children, kindergarten through grade 3. Students may elect courses that will assist them in meeting Office for Children requirements for teachers at the preschool level in group day care settings. The program of study is based upon a broad liberal arts foundation integrated into the professional teacher preparation program. A course waiver process is available for transfer students where appropriate.

Requirements for a Major in Early Childhood Education: 33 credits

ED 150	Teaching and Learning in Early Childhood and Elementary Education
ED 210	Creative and Motor Experiences for Young Children
ED 211	Curriculum and Evaluation in Early Childhood Education
ED 212	Human Interrelationships in Early Childhood Education
ED 253	History and Philosophy of Education
ED 308	Early Childhood Education: Mathematics
ED 309	Early Childhood Education: Science
ED 310	Early Childhood Education: Social Studies
ED 318	Early Childhood Education: Reading, Language Arts
ED 430	Student Teaching in Early Childhood Education

By taking the following additional courses, a candidate may meet Office for Children group day care licensure at the preschool level as a teacher.

ED 311	Field Experience in Early Childhood Education
ED 319	Advanced Field Experience in Early Childhood Education

Early Childhood Education majors must complete an academic minor in one of the following disciplines:

Art	Geography	Physics
Biology	History	Political Science
Chemistry	Mathematics	Psychology
Communication Disorders	Middle East Studies	Sociology
Economics	Music	Spanish
English	Natural Science	Urban Studies
French	Philosophy	

or an Interdisciplinary Minor - 18 credits approved by advisor in:

Fine Arts (art, music, theatre)
Social Studies (history, geography, economics, sociology, political science, philosophy)

Admission to Early Childhood Education Major

Students who plan to major in Early Childhood Education will progress through a three stage process. Each stage must be completed satisfactorily prior to passage to the next stage.

Stage 1 Pre-Early Childhood Education Major

1. Competence in communication skills as demonstrated by completion of the following courses with a grade of C+ or higher.

   EN 102 English Composition II
   ME 110 Speech

2. Potential for teaching children by completing the following courses with a grade of C+ or higher:

   PS 210 Child Growth and Development
   ED 150 Teaching and Learning in Early Childhood and Elementary Education
   ED 210 Creative and Motor Experiences for Young Children
   ED 211 Curriculum and Evaluation in Early Childhood Education
   ED 212 Human Interrelationships in Early Childhood Education

3. Satisfactory completion of a minimum of 45 credits of undergraduate work with a QPA of 2.5 or higher. A course may be repeated only once.

4. Any departure from the prescribed program of study for teacher certification must have waiver committee approval prior to advancement to Stage 2.

5. Upon satisfactory completion of Stage 1 requirements, the student is eligible to apply for formal admission into the Early Childhood Education Major. This application will be reviewed by the Educational Standards Review Committee. The application must include a satisfactory physical examination and Mantoux test, and a college transcript. Approval by the Educational Standards Review Committee is necessary for the student to progress to Stage 2.

Stage 2 Early Childhood Education Major

1. Satisfactory completion of the following courses with a grade of C+ or higher:

   ED 308 Early Childhood Education: Mathematics
   ED 309 Early Childhood Education: Science
   ED 310 Early Childhood Education: Social Studies
   ED 318 Early Childhood Education: Reading, Language Arts
2. Completion of at least half of the requirements of the Academic Minor.
3. A QPA of 2.7 or higher in all course work by the end of Stage 2.
4. Upon satisfactory completion of Stage 2 requirements, the student is eligible to apply for formal admission into the Practicum, ED 430 Student Teaching in Early Childhood Education. This application will be reviewed by the Educational Standards Review Committee.
5. All students will be required to submit information related to felony convictions for campus and State Department of Education review.

Stage 3 Early Childhood Major - Practicum

1. Approval of the Educational Standards Review Committee is necessary for the student to enroll in the Practicum - ED 430 Student Teaching in Early Childhood Education.
2. Completion of ED 430 with a grade of B- or higher.
3. Maintenance of a QPA of 2.7 or higher.
4. Completion of the Academic Minor.
5. Completion of all degree requirements.

Additional information for formal application to student teaching is available in the Education Office, G28.

Elementary Education Major
Teacher Certification Program

The current Elementary Education major—in effect for students entering in the fall of 1988—prepares the candidate for state certification as a teacher of children, Grades 1 through 6. The program of study is based upon a broad liberal arts foundation and integrated into the professional teacher preparation program. A course waiver process is available for transfer students where appropriate.

Requirements for a Major in Elementary Education: 33 credits

ED 150	Teaching and Learning in Early Childhood and Elementary Education
ED 250	Educational Psychology
ED 253	History and Philosophy of Education
ED 275	Curriculum & Instruction in Elementary Education
ED 302	Educational Measurement and Evaluation
ED 333	Teaching Elementary Mathematics
ED 334	Teaching Elementary Science
ED 335	Teaching Elementary Social Studies
ED 336	Teaching Elementary Reading and Language Arts
ED 435	Student Teaching in the Elementary School

Elementary Education majors must complete a 24 credit concentration in one of the following disciplines:

Biology	Middle East Studies
Chemistry	Natural Science
Economics	Philosophy
English	Physics
Geography	Political Science
History	Psychology
Mathematics	Sociology

or an Interdisciplinary Concentration totaling 24 credits in:

Fine Arts (art, music, theatre) or
Social Studies (economics, geography, history, philosophy, political science, sociology, urban studies).

Admission to the Elementary Education Major

The student planning to major in Elementary Education will progress through a three stage process. Each stage must be completed satisfactorily before passage to the next stage.

Stage 1 Pre-Elementary Education Major

1. Competence in communication skills as demonstrated by completion of the following courses with a grade of C+ or higher:

   EN 102 English Composition II
   ME 110 Speech

2. Potential for teaching children by completing each of the following courses with a grade of C+ or higher.

   PS 210 Child Growth & Development
   ED 150 Teaching and Learning in Early Childhood and Elementary Education
   ED 250 Educational Psychology
   ED 275 Curriculum & Instruction in Elementary Education

3. Satisfactory completion of a minimum or 45 credits of undergraduate work with a QPA of 2.5 or higher. A course may be repeated only once.

4. Any departure from the prescribed program of study for teacher certification must have waiver committee approval prior to advancement to stage 2.

5. Upon satisfactory completion of Stage 1 requirements, the student is eligible to apply for formal admission into the Elementary Education Major. This application will be reviewed by the Educational Standards Review Committee. The application must include a physical examination form, Mantoux test, and transcripts of all previous course work. Approval by the Educational Standards Review Committee is necessary for the student to progress to Stage 2.

Stage 2 Elementary Education Major

1. Satisfactory completion of the following courses with a grade of C+ or higher:

   ED 302 Educational Measurement and Evaluation
   ED 333 Teaching Elementary Mathematics
   ED 334 Teaching Elementary Science
   ED 335 Teaching Elementary Social Science
   ED 336 Teaching Elementary Reading and Language Arts

2. Completion of at least 18 credits of the Liberal Arts Concentration by the end of Stage 2.
3. A 2.7 QPA in all course work by the end of Stage 2.
4. Upon satisfactory completion of Stage 2 requirements, the student is eligible to apply for admission into the Practicum experience (ED 435 Student Teaching in the Elementary School). This application will be reviewed by the Educational Standards Review Committee.
5. All students will be required to submit information related to felony convictions for campus and State Department of Education review.

Stage 3 Elementary Education Major - Practicum

1. Approval by the Educational Standards Review Committee is necessary for students to progress through Stage 3.
2. Maintainance of a 2.7 QPA.
3. Completion of the Practicum experience (ED 435) with a 2.7 QPA.
4. Completion of Specialized Education electives by the end of Stage 3.
5. Completion of the Liberal Arts Concentration by the end of Stage 3.
6. Completion of all degree requirements by the end of Stage 3.

Additional information for formal application into student teaching is available in the Education Office, G28.

Secondary Education
Teacher Certification Programs

Worcester State College offers three State approved teacher certification programs at the secondary level (grades 9-12): Teacher of English, Teacher of Mathematics, and Teacher of Social Studies. Students seeking certification in other subject areas may take the secondary education sequence of courses and apply for certification individually.

Admission Requirements:

1. Application on the appropriate departmental form during the second semester of study in the secondary education program. Completion of 15 semester hours of credit in the major with a minimum QPA of 2.30 is required prior to beginning education course work.
2. Completion of at least two secondary education courses with C+ grades or better.
3. Adequate communication skills as assessed by grades of C+ or better in English Composition (EN 101/EN 102).

Program admission does not guarantee student teaching eligibility.

Student teaching is a full school day, semester long experience that also includes a required weekly after-school seminar at the College. Student teaching is intended to be the final course in the required certification sequence of courses and field experiences. All prerequisite education courses must be completed with a minimum QPA of 2.70 before student teaching can begin, and students must have a minimum cumulative QPA of 2.70 in their major. As a rule, only seniors and graduate students will be eligible for student teaching.

Acceptance into student teaching is a multiple stage process. Each stage must be satisfied, and completion of one stage does not guarantee acceptance in subsequent stages. It should be understood that acceptance into student teaching is a selective process. Specific policies for student teaching eligibility are available from the education office, G28.

For more information about the secondary education program, please contact the Education Office, Room G28, Gymnasium Building, or call 793-8000, x8584.

Requirements for Certification as Teacher of Mathematics (9-12)
For Undergraduate Mathematics Majors

Prerequisite: PS 215 Psychology of Adolescence

Secondary Pre-practicum: Math 15 credits

ED 253	History and Philosophy of Education
*ED 255	Learning Skills for Adolescents
*ED 266	Foundations of Curriculum and Instruction
ED 350	Evaluating Classroom Learning (Prerequisite—completion of required 200 level pre-practicum courses)
**ED 357	Curriculum, Methods, and Media in Teaching Mathematics (Prerequisite—completion of required 200 level pre-practicum courses)

*15 hour field experience included
**20 hour field experience included

Secondary Practicum 9 credits

ED 475	Practicum in Teaching (Prerequisites: completion of required education courses, satisfaction of eligibility requirements).

Courses in the Mathematics Major 33 credits

Students should consult their secondary education advisor for a list of approved Mathematics electives.

The following courses and/or exams must be taken in addition to the Mathematics Major courses and Secondary pre-practicum courses in order to assure that the student has met the Standard I requirements for certification as a teacher of secondary school mathematics (17 credits).

MA 110	College Algebra or the College Algebra CLEP Exam or a departmental challenge exam in College Algebra;
MA 120	College Trigonometry or the Trigonometry CLEP Exam or a departmental challenge exam in Trigonometry;

MA 170 Analytic Geometry or a departmental challenge exam in Analytic Geometry;
MA 140 Problem Solving (1 credit);
CH 120 General Chemistry or PY 115, General Physics I
A computer programming language course.

Requirements for Certification as Teacher of English (9-12)
For Undergraduate English Majors

Prerequisite: PS 215 Psychology of Adolescence

Secondary Pre-Practicum: English 15 credits

ED 253 History and Philosophy of Education
*ED 255 Learning Skills for Adolescents
*ED 266 Foundations of Curriculum and Instruction
ED 350 Evaluating Classroom Learning (Prerequisite—completion of required 200 level pre-practicum courses)
**ED 362 Curriculum, Methods, and Media in Teaching English (Prerequisite—ME 135, Oral Interpretation of Literature and completion of required 200 level pre-practicum courses)

*15 hour field experience included
**20 hour field experience included

Secondary Practicum 9 credits

ED 475 Practicum in Teaching (Prerequisites—completion of required education courses, satisfaction of eligibility requirements).

Courses in the English Major 36 credits

Students should consult their secondary education advisor for a list of approved English electives.

Requirements for Certification as Teacher of Social Studies (9-12)
NOTE: Social Studies is not a major at Worcester State College. Students working toward certification as a Teacher of Social Studies typically major in history, sociology, economics, geography, or psychology.

Prerequisite: PS 215 Psychology of Adolescence

Secondary Pre-Practicum: Social Studies 15 credits

ED 253 History and Philosophy of Education
*ED 255 Learning Skills for Adolescents
*ED 266 Foundations of Curriculum and Instruction
ED 350 Evaluating Classroom Learning (Prerequisite—completion of required 200 level pre-practicum courses).
**ED 361 Curriculum, Methods, and Media in Teaching Social Studies (Prerequisite—completion of required 200 level courses).

*15 hour field experience included
**20 hour field experience included

Secondary Practicum 9 credits

ED 475 Practicum in Teaching (Prerequisites—completion of required education courses, satisfaction of eligibility requirements.)

Courses in Social Studies 45 credits

Students should consult their secondary education adviosr for a list of approved electives.

Requirements for Certification in Other Disciplines

Worcester State College provides 21 credits of pre-practicum courses for students who seek certification in any of the areas listed below. Although the programs have been registered with the Bureau of Teacher Certification, the student must apply for certification individually. The College assumes no responsibility for such individual programs.

Behavioral Sciences	General Science
Biology	Health
Chemistry	History
Earth Science	Math/Science
French	Physics
Geography	Spanish

Secondary Pre-practicum 21 credits

PS 215	Psychology of Adolescence
ED 253	History and Philosophy of Education
*ED 255	Learning Skills for Adolescents
ED 257	Teaching Exceptional Adolescents
*ED 266	Foundations of Curriculum and Instruction
ED 350	Evaluating Classroom Learning (Prerequisite—completion of required 200 level pre-practicum courses)
**ED 366	Curriculum, Methods, and Media in Teaching Mathematics and Science (Prerequisite—completion of required 200 level courses)
	or
**ED 367	Curriculum, Methods and Media in Teaching Humanities and Behavioral Sciences (Prerequisite—completion of required 200 level courses)

*15 hour field experience included
**20 hour field experience included

Secondary Practicum 9 credits

ED 475 Practicum in Teaching (Prerequisites—completion of required education courses and satisfaction of eligibility requirements)

Courses in the academic subject area: 36 credits

Students must complete 36 semester hours of credit in the certification area as indicated in Standard I of the State Bureau of Certification's regulations. The specific competencies which must be met in each non-approved area may be obtained in the Education Office, Room G28, Gymnasium Building.

Graduate Programs

Master of Education, Concentration in Early Childhood Education

Admission Requirements: General admission requirements

Requirements of the Program:

Education foundation courses: 9 credits

ED 996	Research and Evaluation
ED 997	Advanced Philosophical Foundations of Education
ED 998	Advanced Psychological Foundations of Education

Other required courses: 15 credits

EE 901	Curriculum for Early Childhood Education
EE 902	Methods and Materials in Early Childhood Education
EE 907	Intellectual Development in Early Childhood Education
EE 909	Supervision and Administration in Early Childhood Education
EE 919	Seminar in Early Childhood Education

Elective courses: 9 credits in Early Childhood Education

Comprehensive Examination: Each candidate must pass a comprehensive examination in early childhood education.

Master of Education, Concentration in Elementary Education

Admission Requirements: General admission requirements.

Applicants must hold a baccalaureate degree from an institution which offers an accredited program in teacher education; applicants must also hold a teaching certificate at the elementary level.

Requirements of the Program:

Education foundation courses: 9 credits

ED 996	Research and Evaluation
ED 997	Advanced Philosophical Foundations of Education
ED 998	Advanced Psychological Foundations of Education

Other required courses: 6 credits

EL 903	Theory and Research in the Elementary School Curriculum
EL 905	Seminar in Current Issues in Elementary Education

Elective courses: 18 credits

Comprehensive Examination: Each candidate must pass a comprehensive examination in elementary education.

Master of Education, Concentration in Secondary Education

This registered program satisfies Standards II-V of the Massachusetts Certification requirements. Students are responsible for meeting competencies for Standard I (content area).

Admission Requirements: Baccalaureate Degree from an accredited college or university with a major or 36 semester hours in a Massachusetts certifiable area included in the methods courses listed below, minimum 2.75 QPA, completion of departmental admission standards, eligibility for student teaching practicum determined through departmental policies.

Requirements of the Program:

PS 215 Psychology of Adolescence

Education foundation courses: 9 credits

ED 996 Research and Evaluation
ED 997 Advanced Philosophical Foundations of Education
ED 998 Advanced Psychological Foundations of Education

Pre-practicum: 21 credits

ES 902 Learning Skills for Adolescents
ES 903 The Art of Teaching Adolescents
ES 904 Curriculum and Instruction for Adolescents
ES 907 Individualizing Instruction in the Middle and Secondary School
ES 910 Evaluation of Classroom Learning: Grades 9-12.

One graduate elective in subject area

Students select one of the following Methods Courses:

ES 901 Language and Language Teaching
ES 905 Methods and Materials for Teaching Humanities
ES 906 Methods and Materials for Teaching Science and Math
HE 917 Creative Teaching in Health

Practicum: 12 credits

ES 911 Teaching Practicum

Comprehensive Examination: All students must successfully complete a comprehensive examination.

Other Programs

State Certification Programs:

Consulting Teacher of Reading
School Guidance Counselor
School Principal
Supervisor/Director
Teacher of Children with Moderate Special Needs

The certification programs are under revision. Information about the programs may be obtained from the Office of the Dean of Graduate Studies, Worcester State College, 486 Chandler Street, Worcester, Massachusetts 01602-2597.

Certificate in Adult Education:

Admission Requirements: General admission requirements

Requirements for the Certificate: Five courses (15 credits) selected from the following, with the approval of the program coordinator and department chair:

EA 901 Teaching the Illiterate Adult
EA 903 Materials and Methods in Adult Education
EA 904 Directed Study in Adult Education

EA 905	Foundations of Adult Education
EA 906	Psychology of the Adult Learner
EA 907	Program Planning for Adults
EA 908	Administration in Adult Education
EA 909	Internship in Adult Education

One graduate elective selected with the approval of the program coordinator and the department chair.

All requirements for the certificate must be completed within three years of the date of admission to the program.

Urban Studies

Professors: Amory, Langlois, Power, Powers

Requirements for a Major: 36 credits in courses with numbers between UR 101 and UR 439. Experiential courses in internship and practicum count for degree credit above the required 36 credits in formal classroom courses.

Requirements for a Major in Urban Studies, Concentration in Gerontology:

UR 325	Social Casework in the Urban Setting

Two courses offered by participating institutions of the Worcester Consortium for Higher Education
Two courses selected from the following:

UR 201	Analysis of Urban Systems
UR 340	Urban Housing Dilemma
UR 341	Urban Health and Social Service Systems
UR 411	Assigned Readings in Urban Studies
HE 320	Aging and Death
SO 215	Medical Sociology
SO 220	Sociology of the Family

Field Experience: 6 credits

Requirements for a Major in Urban Studies, Concentration in Health and Human Services:

UR 101	Introduction to Urban Systems
UR 212	American Metropolitan Evolution
UR 213	Human Identity and the Urban Environment
UR 320	Human Needs and Social Services
UR 341	Urban Health and Social Services Systems
UR 401	Research Seminar in Urban Studies

Requirements for a Major in Urban Studies, Concentration in Public Service and Urban Community Planning:

UR 101	Introduction to Urban Systems
UR 212	American Metropolitan Evolution
UR 213	Human Identity and the Urban Environment
UR 310	Power, Politics, and Decision-Making in Urban Communities
	or
UR 311	Community Politics and Policies

UR 370 Structure and Function of Urban Organizations
UR 401 Research Seminar in Urban Studies

Requirements for a Minor: 18 credits including the following:

UR 101 Introduction to Urban Systems
UR 212 American Metropolitan Evolution
UR 213 Human Identity and the Urban Environment
Three additional UR 300 level courses

Graduate Program

Master of Science in Human Service Management

Admission Requirements: General admission requirements. In addition, applicants will be individually interviewed by the department and selected on the basis of motivation, career goals, and established experience in the human service field.

Requirements of the Program: 36 graduate credits including the following 21-credit core:

UR 940 Leadership Skills and Social Group Work
UR 942 Organizational Theory and Effective Intervention
UR 944 Politics, Public Policy, and the Human Services
UR 945 Financial Management for Non-Profit Organizations
UR 946 Seminar in Program Analysis and Evaluation
UR 948 Advanced Supervision Skills
UR 949 Strategic Decision-Making and Computer Systems

Any two of the following may be taken as electives, along with such other courses as are approved in advance by the advisor:

UR 930 Communications for Effective Management
UR 932 Practices in Community Organization
UR 950 Unions and the Public Sector
UR 993 Marketing in Non-Profit Organizations
UR 995 Accounting and Budgeting for Public Management
UR 997 Personnel Management and Non-Profit Organizations
UR 996 Public Law

Each candidate must complete a six-credit action research project as follows:
UR 990 Action Research I
UR 991 Action Research II

Engineering Science

Chemical Engineering
Civil Engineering
Mechanical Engineering

In cooperation with the University of Lowell and the Worcester Polytechnic Institute, the College offers engineering transfer programs for students interested in obtaining a bachelor's degree in engineering.

Students completing the first two years of the prescribed program at Worcester State College with a quality point average of 3.0 or above will be guaranteed admission to the University of Lowell as juniors in the Chemical, Civil, or Mechanical Engineering Programs.

The Worcester State College/Worcester Polytechnic Institute Engineering Program is a five year plan (three years at WSC and two years at WPI). Interested students must be full-time freshmen at Worcester State College and must apply to Worcester Polytechnic Institute before March 1 of their freshman year. Accepted students are assigned an advisor at each college. Together the advisors guide the student in the selection of courses to meet the requirements for transfer to Worcester Polytechnic Institute.

Requirements for the Program in Chemical Engineering at the University of Lowell:

First Year

Fall		***Credits***	***Spring***		***Credits***
EN 101	English Composition I	3	EN 102	English Composition II	3
MA 200	Calculus I	4	MA 201	Calculus II	4
PY 120	Physics I (with laboratory)	4	PY 121	Physics II (with laboratory)	4
CH 120	General Chemistry I (with laboratory)	4	CH 121	General Chemistry II (with laboratory)	4
	Humanities elective	3		Humanities elective	3
		18			18

Second Year

Fall		***Credits***	***Spring***		***Credits***
CH 201	Organic Chemistry I	3	CH 202	Organic Chemistry II	3
CH 203	Organic Chemistry Laboratory I	2	CH 204	Organic Chemistry Laboratory II	2
MA 310	Calculus III	4	EC 101	Introduction to Microeconomics	3
CS 250	Scientific Programming I (FORTRAN)	3	MA 320	Ordinary Differential Equations	3
	Technical elective	3		Technical elective	3
	Physical Education	1		Physical Education	1
		16			15

To Be Taken at University of Lowell (summer) or through the Consortium

25.101	Introduction to Engineering Design and Graphics
10.203	Chemical Engineering Calculations I
10.204	Chemical Engineering Calculations II
10.206	Fluid Mechanics
10.207	Computer Programming for Chemical Engineering

(Course to be taken at the University of Lowell in the junior year in place of humanities elective: 14.217 Statics of Strength Materials.)

Technical electives in the above program may not be substituted for University of Lowell senior level technical electives.

Students completing the above program at Worcester State College with a quality point average of 3.0 or above will be guaranteed admission to the Chemical Engineering Program at the University of Lowell as juniors. Students with a QPA of 2.5 to 2.999 will be admitted to the program on a space available basis.

Requirements for the Program in Civil Engineering at the University of Lowell:

First Year

Fall		***Credits***	***Spring***		***Credits***
EN 101	English Composition I	3	EN 102	English Composition II	3
MA 200	Calculus I	4	MA 201	Calculus II	4
PY 120	Physics I (with laboratory)	4	PY 121	Physics II (with laboratory)	4
CH 120	General Chemistry I (with laboratory)	4	CH 121	General Chemistry II (with laboratory)	4
	Humanities elective	3		Humanities elective	3
		18			18

Second Year

Fall		***Credits***	***Spring***		***Credits***
MA 334	Statics	3	MA 381	Mathematical Statistics	3
MA 338	Surveying	3	EN 252	Technical Writing	3
MA 310	Calculus III	4	MA 320	Ordinary Differential Equations	3
CS 250	Scientific Programming I (FORTRAN)	3	EC 100	Introduction to Macroeconomics	3
	Social Science elective	3		Social Science elective	3
	Physical Education	1		Physical Education	1
		17			16

To Be Taken At University of Lowell (summer) or through the Consortium

14.204 Strength of Materials
25.101 Introduction to Engineering Design and Graphics

(Course to be taken at the University of Lowell in the junior year in place of humanities elective: 14.226 Surveying II)

Students completing the above program at Worcester State College with a quality point average of 3.0 or above will be guaranteed admission to the Civil Engineering Program at the University of Lowell as juniors. Students with a QPA of 2.5 to 2.999 will be admitted to the program on a space available basis.

Requirements for the Program in Mechanical Engineering at the University of Lowell:

First Year

Fall		***Credits***	***Spring***		***Credits***
EN 101	English Composition I	3	EN 102	English Composition II	3
MA 200	Calculus I	4	MA 201	Calculus II	4
PY 120	Physics I (with laboratory)	4	PY 121	Physics II (with laboratory)	4
CH 120	General Chemistry I (with laboratory)	4	CH 121	General Chemistry II (with laboratory)	
	Humanities elective	3		Humanities elective	3
		18			18

Second Year

Fall		***Credits***	***Spring***		***Credits***
MA 334	Statics	3	PY 230	Electricity and Magnetism I	3
EN 252	Technical Writing	3	MA 320	Ordinary Differential Equations	3
MA 310	Calculus III	4	CS 250	Scientific Programming I (FORTRAN)	3
PY 122	Physics III (with laboratory)	4	MA 336	Dynamics	3
PY 210	Mechanics I	4		Physical Education	1
	Physical Education	1			13
		19			

To Be Taken At University of Lowell (summer) or through the Consortium

22.212	Mechanics of Materials II
22.242	Thermodynamics
25.101	Introduction to Engineering Design and Graphics

(Courses to be taken at the University of Lowell in the junior year in place of humanities electives: 16.211, Fundamentals of Electricity and 22.295, Material Science.)

Students completing the above program at Worcester State College with a quality point average of 3.0 or above will be guaranteed admission to the Mechanical Engineering Program at the University of Lowell as juniors. Students with a QPA of 2.5 to 2.999 will be admitted to the program on a space available basis.

Health Sciences

Chair: Semerjian

Health Studies
Occupational Therapy
Physical Education

Health Studies

Professors: Burke, Read
Associate Professors: Chen, Munson, Semerjian

The Health Science discipline offers instruction leading to the Bachelor of Science degree in health studies with concentrations in health counseling, health services, and health education. Each concentration has been designed to enable students to acquire the basic knowledge and skills needed to practice their chosen profession while at the same time obtaining a broad cultural background in the humanities and in the social and natural sciences. An honor society in Health Education, Eta Sigma Gamma, is available to qualified students.

Admission Requirements: Students must have completed two or more health courses, complete the prerequisites listed below with an average of C or better, submit a formal application, and have a personal interview with a faculty panel. The prerequisites are:

BI 161 and BI 162	Human Anatomy and Physiology I and II
CH 110 and CH 111	Introduction to General, Organic, and Biochemistry I and II
MA 250	Introduction to Statistics I
PS 110 and PS 111	General Psychology I and II
SO 100	Introduction to Sociology

Requirements for a Major in Health Studies, Concentration in Health Services: 39 credits

HE 100	Personal Health
HE 110	Drugs and Society
HE 120	Health and Nutrition
HE 200	Consumer Health
HE 310	Group Processing
HE 440	Practicum in Health

Health Electives: 21 credits

Requirements for a Major in Health Studies, Concentration in Health Counseling: 39 credits

HE 100	Personal Health
HE 110	Drugs and Society
HE 130	Human Sexual Awareness
HE 310	Group Processing
HE 340	Health Counseling
HE 440	Practicum in Health
PS 240	Abnormal Psychology
PS 435	Clinical Psychology

Health Electives: 15 credits

Requirements for a Major in Health Studies, Concentration in Health Education: 39 credits

HE 260	First Aid: Advanced Theory and Skill (or First Aid Certification)
HE 100	Personal Health
HE 120	Health and Nutrition

HE 110	Drugs and Society
HE 200	Consumer Health
HE 230	Human Sexuality and Sex Education
HE 440	Practicum in Health (or student teaching)

Required health electives: 18 credits

BI 112	Diseases of Mankind*
HE 220	Mental Health Education*
HE 275	Fitness for Life*

*Required for teacher certification.

Requirements for a Minor: 18 credits. All students must complete the following:

HE 100	Personal Health
HE 110	Drugs and Society
HE 120	Health and Nutrition
HE 200	Consumer Health

Health Electives: 6 credits

Requirements for Health Fitness Minor: Prerequisites plus 18 credit hours:

Prerequisites:

BI 161	Anatomy and Physiology I
BI 162	Anatomy and Physiology II

Required Courses:

HE/PE 275	Fitness For Life
PE 300	Fitness Appraisal and Exercise Prescription
PE 420	Practicum in Health Fitness

Electives (9 credits) may be selected from the following:

BA 200	Management and Organizational Behavior
BI 172	Exercise Physiology
HE 120	Health and Nutrition
HE/PE 260	First Aid: Advanced Theory and Skill
HE/PE 280	Individualized Stress Management and Relaxation
PE 230	Mechanical Analysis of Motor Activities
PE 225	Fundamentals of Athletic Training
PS 285	Psychology of Motivation

Graduate Program

Master of Education, Concentration in Health Education

The master's program with a concentration in health education is designed to prepare teachers at the elementary and/or secondary level, and Generic Health Educators. In the event a student enters with preparation equivalent to any of the courses listed below, other courses may be elected. Students with minimal background in the field may be required to take additional courses as prerequisites.

Admission Requirements: General admission requirements

Requirements of the Program:

Education foundation courses: 9 credits

ED 996	Research and Evaluation
ED 997	Advanced Philosophical Foundations of Education
ED 998	Advanced Psychological Foundations of Education

Health education concentration courses: 15 credits

HE 917	Creative Teaching in Health
HE 930	Drugs, Alcohol and Tobacco
HE 932	Advanced Nutrition
HE 935	Human Sexuality
HE 945	Seminar in Health

Electives: 9 semester hours of credit, selected with the advisor's assistance.

With permission of the Program Coordinator, additional electives in related fields may be taken.

Comprehensive Examination: Each candidate must pass a comprehensive examination in health education.

Occupational Therapy

Associate Professor: Joss
Instructors: Brennan, Dufresne, McNeil, Henry

The Occupational Therapy program combines a strong background in the arts, humanities, and natural and social sciences with professional courses in the theory and practice of occupational therapy. It leads to the degree of Bachelor of Science in Occupational Therapy. This degree and successful completion of six months of post-baccalaureate fieldwork qualifies the student to sit for the national certification examination. It also qualifies the individual for licensure as an occupational therapist by the Commonwealth of Massachusetts.

The program has two tracks: Track One for students who have no educational background in occupational therapy and Track Two for students with an associate's degree in occupational therapy.

Admission Requirements: Track One admission requires completion of the following prerequisites with a grade of C or better:

BI 161 and BI 162	Human Anatomy and Physiology I and II
BI 171	Basic Kinesiology
NS/BI 315	Neuroanatomy and Physiology
OT 100	Introduction to Occupational Therapy
OT 200 and OT 201	Occupational Therapy Intervention Techniques: Media I and II
OT 230	Communication and Group Process in Occupational Therapy
PS 110 and PS 111	General Psychology I and II
PS 120	Human Development

Track One also requires a written reference from a work related or volunteer experience in the field of Occupational Therapy of not less than 50 hours. A formal application to the program must be made including a writing sample at a designated application meeting. Formal application should be made in the Spring

Semester during which the student anticipates completion of the prerequisite courses, usually in the Sophomore year. These will be considered along with an assessment of potential for professional behavior to be done by Occupational Therapy faculty of prerequisite courses. The number of students who can be admitted to the program is limited; the College reserves the right to select applicants with the highest academic credentials. Completion of the prerequisite courses with a C or better does not ensure admission to the program.

Requirements for a Major: Track One: Ancillary requirements: 6 credits

MA 250	Introduction to Statistics I
CS 111	Programming Languages I (or comparable computer science course)

Upper division occupational therapy requirements: 38 credits

OT 303	Human Performance, Occupation and the Activity Process
OT 305	Health and Illness: Physiological
OT 310	Occupational Therapy Methods with Developmental Problems I
OT 311	Practicum in Developmental Problems I
OT 315	Health and Illness: Psychosocial
OT 320	Occupational Therapy Methods with Developmental Problems II
OT 321	Practicum in Developmental Problems II
OT 405	Methods of Occupational Therapy Practice with Physiological Diagnoses
OT 406	Practicum in Occupational Therapy with Physiological Diagnoses
OT 410	Organization and Administration of Occupational Therapy Services
OT 412	Research Methods in Occupational Therapy
OT 415	Methods of Occupational Therapy Practice with Psychosocial Diagnoses
OT 416	Practicum in Occupational Therapy Methods with Psychosocial Diagnoses
OT 420	Methods of Facilitating Therapeutic Adaptation
OT 425	Seminar in Occupational Therapy

Admission Requirements: Track Two admission requires completion of the following prerequisites with a grade of C or better:

BI 161 and BI 162	Human Anatomy and Physiology I and II
BI 171	Basic Kinesiology
NS/BI 315	Neuroanatomy and Physiology
OT 230	Communication and Group Process in Occupational Therapy

Track Two admission requires an associate's degree in Occupational Therapy from an accredited institution and successful completion of the American Occupational Therapy Association certification examination for Occupational Therapy Assistants. The applicant must also submit a reference form to be completed by previous Occupational Therapy Assistant faculty or clinical supervisors. A formal application to the program must be made including a writing sample at a designated application meeting. Formal application should be made

in the semester during which the student anticipates completion of the prerequisite courses. These will be considered along with an assessment of potential for professional behavior to be done by Occupational Therapy faculty of prerequisite courses. The number of students who can be admitted to the program is limited; the College reserves the right to select applicants with the highest academic credentials. Completion of the prerequisite courses with a C or better does not ensure admission to the program.

Requirements for a Major: Track Two: Ancillary requirements: 6 credits

MA 250	Introduction to Statistics I
CS 111	Programming Languages I (or comparable computer science course)

Upper division occupational therapy requirements: 30 credits

OT 303	Human Performance, Occupation and the Activity Process
OT 305	Health and Illness: Physiological
OT 312	Occupational Therapy Methods with Developmental Problems I (Accelerated)
OT 315	Health and Illness: Psychosocial
OT 325	Occupational Therapy Methods with Developmental Problems II (Accelerated)
OT 407	Occupational Therapy Methods with Physiological Diagnoses (Accelerated)
OT 410	Organization and Administration of Occupational Therapy Services
OT 412	Research Methods in Occupational Therapy
OT 417	Occupational Therapy Methods with Psychosocial Diagnoses (Accelerated)
OT 420	Methods of Facilitating Therapeutic Adaptation
OT 425	Seminar in Occupational Therapy

In addition to the specific Track One and Track Two requirements for graduation, eligibility for the national certification examination requires successful completion of six months of Level II Fieldwork (OT 450 and OT 451). No student will be allowed to begin Level II Fieldwork until all coursework required for the BS is completed and all required occupational therapy courses have been completed with a grade of C or better.

Students should be prepared to accept and assume the responsibility for transportation to Level I and Level II Fieldwork placements in geographic areas outside the City of Worcester.

Physical Education

Associate Professors: Dyson, Mockler, Nugent
Assistant Professors: Demars, Duquette

The physical education program offers students participation in individual and team activities designed to develop skill, fitness, and knowledge to meet immediate and life-long needs and interests. Minors are available in Coaching and Health Fitness.

Requirements for a Minor in Coaching: 18 credits in coaching and/or coaching related courses.

Requirements for Health Fitness Minor: Prerequisites plus 18 credit hours:

Prerequisites:

BI 161	Anatomy and Physiology I
BI 162	Anatomy and Physiology II

Required Courses:

HE/PE 275	Fitness For Life
PE 300	Fitness Appraisal and Exercise Prescription
PE 420	Practicum in Health Fitness

Electives (9 credits) may be selected from the following:

BA 200	Management and Organizational Behavior
BI 172	Exercise Physiology
HE 120	Health and Nutrition
HE/PE 260	First Aid: Advanced Theory and Skill
HE/PE 280	Individualized Stress Management and Relaxation
PE 230	Mechanical Analysis of Motor Activities
PE 225	Fundamentals of Athletic Training
PS 285	Psychology of Motivation

History and Political Science

Chair: Shea

Professors: Edmunds, Fox, Mitchell, Saliba, Shea, Spector, Yuan
Associate Professors: Cohen, Delaney, Goldsmith, Kane, McGraw, Minasian, Twiss
Assistant Professor: Dalton

The purpose of the discipline is to provide the student with the extensive course offerings to enable him or her to cope with a complex and ever-shrinking world. The study of history and political science also provides the student with a broad background for a wide variety of professional occupational opportunities. Within the history major are concentrations in American Studies, Foreign Service, and Labor Studies/Labor Relations. The discipline also offers a minor in Middle East Studies, a pre-law program and an honors curriculum. Phi Alpha Theta, the national history honor society is available to distinguished history majors even if they are not in the honors curriculum.

Requirements for a Major: 36 credits including

HI 101 and HI 102	Western Civilization I and II
HI 111 and HI 112	US History I and II

US History electives: 6 credits
European History electives: 6 credits
Non-US, non-European electives: 6 credits

Other electives in history: 6 credits

Requirements for a Major in History, Concentration in Foreign Service: Student programs are individually planned with the student's advisor and prepare individuals for careers in the State Department and the intelligence community. In addition to required courses, students will be encouraged to elect courses in the areas of economics, languages, management, geography, and related fields.

Requirements for a Major in History, Concentration in American Studies: Juniors and seniors have the opportunity for independent study and off-campus internships. Students may work as interns in historic museums, historic restorations, historic libraries, archives, or in any one of a great variety of agencies in state, county, and local government. The program also offers internships and independent study opportunities with private sector agencies which have a public interest. The student will also be able to complete the requirements for the history major and the political science minor.

Requirements for a Major in History, Concentration in Labor Studies/Labor Relations: This program permits majors in Business Administration, Economics, and History an opportunity to take a multi-disciplinary concentration on labor-related courses in their respective fields and two other disciplines. With this preparation, students might consider career possibilities in labor relations in industry, government, labor organizations, and academia; and to undertake graduate study (master's level) that would lead to such careers. Recommended sequences in each discipline to be selected in consultation with program coordinators in each field.

Requirements for a Minor in History: 18 credits

HI 101 and HI 102 Western Civilization I and II
HI 111 and HI 112 US History I and II
Electives: 6 credits

Requirements for a Minor in Political Science: 18 credits

PO 101 Principles of Political Science
Electives: 15 credits in Political Science

Requirements for a Minor in Middle East Studies: 18 credits

HI 261 Middle East History I
HI 314 Twentieth Century Middle East History
12 credits recommended by advisor

Honors Curriculum: This program is open to qualified majors (juniors and seniors) who display outstanding abilities in historical studies in their first two years and are interested in pursuing a deeper and broader knowledge of the subject.

Pre-Law Program: As a special preparation for law school, a minimum of 12 credits in constitutional history and a minimum of 15 credits in political science are required. In addition to the core program, the student may select the remainder of the required hours for the degree from a wide variety of subjects.

Graduate Program

Master of Education, Concentration in History

Admission Requirements: General admission requirements together with 18 credits in history including the following courses or their equivalents:

HI 101 and HI 102 Western Civilization I and II
HI 111 and HI 112 US History I and II

Requirements of the Program:

Education foundation courses: 9 credits

ED 996 Research and Evaluation
ED 997 Advanced Philosophical Foundations of Education

ED 998 Advanced Psychological Foundations of Education

HI 910 The Study and Writing of History
US History elective: 3 credits
Non-US elective: 3 credits
Non-US, non-European History elective: 3 credits
Additional history electives: 6 credits in any of the above three areas

Additional courses in education: 6 credits with the approval of the student's guidance committee

Comprehensive Examination: Each candidate must take and pass a written comprehensive examination in history.

Languages and Literature

Chair: Roberts

English
Foreign Languages

English

Professors: Ayer, Gibbs, Goldwyn, Gordon, Herx, Johnson, Roberts, Todd, Tyrell, Walker
Associate Professors: Crowley, Eddy, Ellis, Sullivan, Wasilko
Instructor: Grandone

The principal objectives of the English program are to help students to communicate clearly, logically, and effectively; to use research methods intelligently; and to analyze, interpret, and enjoy literature. The program also seeks to familiarize students with the classics of world literature, emphasizing the major authors, works, and literary movements which distinguish English and American Literature. Lambda Iota Tau, a national honor society in literature, is available to outstanding junior and senior English majors and minors.

Requirements for a major: 36 credits in English (exclusive of EN 99, EN 100, EN 101 and EN 102) which must include the following:

EN 210 Survey of American Literature I
or
EN 211 Survey of American Literature II
EN 220 Survey of English Literature I
and
EN 221 Survey of English Literature II
EN 360 Shakespeare I
Electives: 24 credits, selected with the assistance of the advisor.

Requirements for a major in English, Concentration in Writing: 18 credits in writing courses (exclusive of EN 101 and EN 102, English Composition I and II) in addition to the four courses required of all majors. The remaining six courses must include a minimum of two 300 level English electives.

Requirements for a Minor: 18 credits including

EN 210 Survey of American Literature I
or
EN 211 Survey of American Literature II
EN 220 Survey of English Literature I
and
EN 221 Survey of English Literature II
Electives: 9 credits

Graduate Program

Master of Education, Concentration in English

Admission Requirements: In order to be admitted to the English Concentration, a candidate must meet the general requirements for admission into the Master of Education degree program. The applicant shall, prior to admission into the concentration, have earned 18 semester hours of credit in English, excluding English Composition, at an accredited institution of higher education. Admission to the program is subject to approval by the Concentration coordinator and the Dean of Graduate Studies.

Requirements of the Program:

Education foundation courses: 9 credits
ED 996 Research and Evaluation
ED 997 Advanced Philosophical Foundations of Education
ED 998 Advanced Psychological Foundations of Education

English concentration courses: The student will select, with the approval of a graduate advisor, 18 credits from among three areas of concentration: Writing, History, and Criticism; American Literature; and English Literature. Two additional courses in English or another area are also required.

Comprehensive Examination: Candidates are required to pass a written comprehensive examination upon completion of their course work. The subject and form of the examination will be determined by the student and the comprehensive committee.

Foreign Languages

Professors: Alcala, Celona, Shea
Associate Professors: DeBenedictis, Kittredge

The major in French or Spanish is designed for the student whose interests and career plans have an international or multi-ethnic focus. The student who majors or minors in a language can expect to develop speaking, reading, and writing fluency. Majors will study in depth the culture, history, and literature of the people who use the language.

Requirements for a Major in French: 36 credits including:

200 level French courses: 6 credits maximum
FR 320-329, advanced French language courses: 9 credits minimum
FR 330-339, French civilization courses: 3 credits minimum
FR 340-349, French literature courses: 9 credits minimum

Courses in a second foreign language: 6 credits minimum

Requirements for a Minor in French: 18 credits including
FR 100-299, beginning and intermediate courses: 12 credits maximum
FR 300-499, advanced courses: 6 credits minimum

Requirements for a Major in Spanish: 36 credits including:
200 level Spanish courses: 9 credits **maximum**
SP 320-329, advanced Spanish language courses: 9 credits minimum
SP 330-339, Spanish civilization courses: 3 credits minimum
SP 340-359, Spanish literature courses: 9 credits minimum
Courses in a second foreign language: 6 credits minimum

Requirements for a Minor in Spanish: 18 credits including
SP 100-299, beginning and intermediate courses: 12 credits maximum
SP 300-499, advanced courses: 6 credits minimum

Mathematics and Computer Science

Chair: Schoen

Professors: Campo, Glassbrenner, Hayes, Hill, Hilton, Perry, Redding, Schoen, Zax
Associate Professors: Avedikian, Johnson, Mulcahy, Ogozalek
Assistant Professor: Kotzen
Instructor: Hebhardt

The department prepares its students for advanced study and research as well as for careers in actuarial science, business and industry, government, and teaching. The graduate program offers various options in specific areas of mathematics which increase the level of knowledge and experience of the students.

Admission Requirements: Computer Science Major: Students must have completed the freshman year and the following prerequisites with a grade of C or better:

CS 111	Programming Languages I
MA 200 and MA 201	Calculus I and II
PY 260 and PY 261	Analog and Digital Electronics I and II

Admission Requirements: Mathematics Major: Good SAT scores, adequate high school background with at least average grades in mathematics and computer science courses.

Requirements for a Major in Computer Science: 39 credits

CS 230	PASCAL Language Programming
CS 250	Scientific Programming I
CS 251	Scientific Programming II
	or
CS 330	Advanced PASCAL
CS 310	Computer Organization and Assembly Language Programming
CS 315	Digital Logic Circuits
CS 350	Computer Architecture and Operating Systems
CS 361	Data Structures
CS 370	Compiler Design
CS 410	Digital Computer Organization

CS 430 Analysis of Algorithms
CS 440 Computability and Finite Automata
MA 220 Discrete Mathematics I
MA 321 Discrete Mathematics II

Requirements for a Major in Mathematics: 33 credits

MA 200 Calculus I
MA 201 Calculus II
MA 310 Calculus III
MA 220 Discrete Mathematics I
2 Electives: 200 level and above (except MA 202, MA 203)
4 Electives: 300 level and above

Suggested electives:

Actuarial Science

MA 330 Linear Algebra
MA 370 Introduction to Actuarial Science
MA 375 Life Contingencies
MA 380 Probability
MA 381 Mathematical Statistics
MA 440 Introduction to Numerical Analysis

Professional Preparation for Engineering and Architecture

MA 320 Ordinary Differential Equations
MA 321 Discrete Mathematics II
MA 330 Linear Algebra
MA 334 Statics
MA 336 Dynamics
MA 338 Surveying

Minor in Secondary Education

MA 250 Introduction to Statistics I
MA 325 Introduction to Quantitative Methods
MA 330 Linear Algebra
MA 340 Modern Geometry I
MA 350 History of Mathematics
MA 360 Number Theory

For Mathematics Teacher Certification requirements, see Education.

Requirements for a Minor in Computer Science: 18 credits in computer science which may include the following:

MA 220 Discrete Mathematics I
MA 440 Introduction to Numerical Analysis
MA 498 Internship
or
CS 498 Internship

but may not include CS 101, Computers in Society

Requirements for a Minor in Mathematics: 18 credits

MA 220 Discrete Mathematics I
MA 200 and MA 201 Calculus I and II

7 credits in mathematics electives (excluding MA 100)

Graduate Program

Master of Science in Applied Mathematics

Admission Requirements: General admission requirements plus the full calculus sequence and discrete mathematics are prerequisites for all students pursuing the Master of Science in Applied Mathematics.

Prerequisites:

MA 200	Calculus I
MA 201	Calculus II
MA 310	Calculus III
MA 320	Ordinary Differential Equations
MA 220	Discrete Mathematics I

Requirements for a Master of Science in Applied Mathematics:
Required core courses 12 credits:

MA 904	Applied Mathematics I
MA 910	Applied Mathematics II
MA 906	Numerical Methods I
MA 912	Numerical Methods II

Electives: 21 semester hours of credit selected from the following:

MA 908	Analysis I
MA 914	Analysis II
MA 916	Probability
MA 918	Mathematical Statistics
MA 925	Number Theory
MA 920	Linear Algebra
MA 930	Theory of Interest
MA 940	Life Contingencies
MA 950	Multiple Regression
MA 960	Partial Differential Equations
MA 970	Numerical Analysis of Differential Equations

Comprehensive Examination: All students must pass a comprehensive examination that is based upon the material in the core courses.

Media, Arts, and Philosophy

Chair: Bullens

Art
Media
Music
Philosophy

Art

Professors: Carter, Kosmer
Associate Professor: Merle
Assistant Professors: Casale, Kocher

The faculty of art offers diversified courses designed to help the individual understand and develop sensory perception, become aware of human artistic

accomplishments, and perceive the possibilities of designing and changing the visual and physical environment.

Requirements for a Minor in Art: 18 credits, including a minimum of 3 credits in art history and at least one Art course at the 300 level. (The College reserves the right to retain some student work for demonstration and exhibition.)

Media

Professors: Cooper, Davis, Shea
Associate Professors: Byers, McGough
Assistant Professors: Akrami, Bullens

The media program provides students with skills in the communication processes that use vocal, mechanical, optical, electronic, or performance means. It is also designed to prepare students for entry level positions in business, industry, health services, and other fields in which their communication skills can be used.

Requirements for a Major in Media, Concentration in Communications Media: 36 credits including

ME 100 Introduction to Mass Communications
ME 199 Interpersonal Communication in Media
ME 263 Visual Media Design
ME 384 Media Criticism
and 24 additional credits in Media

Requirements for a Major in Media, Concentration in Theatre:

ME 100 Introduction to Mass Communications
ME 135 Oral Interpretation of Literature
ME 191 Introduction to Theatre
and 27 additional credits in Media.

Requirements for a Minor: 18 credits including

ME 100 Introduction to Mass Communications
ME 199 Interpersonal Communication in Media

Music

Associate Professors: Celona, Sahagian

The music discipline considers appreciation, understanding, progress, and quality as its goals and offers a choice of courses in music literature and theory. Music as an educational factor in developing and broadening an individual is emphasized.

Requirements for a Minor in Music: 18 credits

Philosophy

Professors: Schaff, Schlosser, Traub
Associate Professor: Robbins
Assistant Professor: Brophy

The purpose of philosophy is the development of a free, responsible, and civilized person with a critical and humane intelligence. To achieve this objective the student studies the major philosophers in the ancient, medieval, modern, and contemporary periods, and the basic problems (political, social, moral, and metaphysical) concerning human nature and destiny.

Requirements for a Minor in Philosophy: 18 credits including
PH 120 History of Western Philosophy
PH 140 Philosophy of Science, Nature, and Man

Natural and Earth Sciences

Chair: Belanger

Biology
Chemistry
Geography and Geology
Natural Science and Physics

Biology

Professors: Boger, Chauvin-Fortier, Graham, Holle, Paracer
Associate Professor: Russell
Instructor: Gilroy

The faculty in the life sciences offer courses and programs to provide for the general education of students and preparation of the BA and BS major and minor in Biology. In addition, it offers a graduate program toward the MS degree. The biology courses may be supplemented with courses in nuclear medicine technology, administrative studies, health education, sports medicine, and public health biology. Beta Beta Beta, the national honor society in biology, is available to distinguished majors.

Requirements for a Major: 37 credits. A biology major is required to complete:

BI 151 General Botany
BI 152 General Zoology
BI 404 Biology Seminar

A minimum of two of the following:

BI 201 Introduction to Cell Biology
BI 202 Principles of Ecology
BI 203 Genetics
BI 204 Microbiology

A minimum of five designated upper division electives (four of which must be laboratory courses) selected with the advice and consent of a faculty advisor.

A quality point average of 2.0 must be maintained in biology courses and in the ancillary science and mathematics courses. Students considering graduate and professional work should take courses in the ancillary sciences including, as a recommended minimum, courses in general and organic chemistry, general physics, calculus, introduction to computer science, and statistics. Biology elective courses include the 300 level courses generally; BI 402, Biological Problems; and BI 403 Biology Internship.

Requirements for a Minor in Biology: 24 credits

BI 151 General Botany
BI 152 General Zoology

A minimum of two of the following:

BI 201	Introduction to Cell Biology
BI 202	Principles of Ecology
BI 203	Genetics
BI 204	Microbiology

Two three or four credit courses from among the designated upper division electives selected with the advice and consent of the faculty advisor.

A minimum of 6 credits in the ancillary sciences

Requirements for a Major in Biology, Concentration in Nuclear Medicine Technology: 48 credits

The department also offers, in conjunction with the University of Massachusetts Medical School, a concentration in Nuclear Medicine Technology, administered by a program advisory committee. Nuclear medicine is a study of techniques developed in hospitals, particularly in radiology, pathology and internal medicine departments. These techniques are used for both diagnostic and therapeutic purposes. Students interested in being considered candidates for admission to the program should contact either the program coordinator or the nominating committee through the Worcester State College Academic Advising Office as early in their college career as possible. The program is limited to a relatively small number of students.

Prerequisites for this program include successful completion of the following:

BI 161 and BI 162	Human Anatomy and Physiology I and II
CH 110 and CH 111	Introduction to General, Organic and Biochemistry I and II
	or
CH 120 and CH 121	General Chemistry I and II
MA 200 and MA 201	Calculus I and II
PY 115 and PY 116	General Physics I and II
	or
PY 120, PY 121, PY 122	Physics I, II, III

Candidates must visit the Medical School Nuclear Medicine Department and file intent to enroll forms with the Worcester State College Nuclear Medicine Technology coordinator prior to being considered a candidate for the program.

The technical specialty courses of the Nuclear Medicine Technology Program are

Introduction and Hospital Orientation (no credit)

PY 310	Modern Physics
BI 373	Radiation Biology
BI 400	Medical Terminology
BI/PY 451	Nuclear Instrumentation I
BI/PY 452	Nuclear Instrumentation II
BI 454	NMT Clinical Practicum I
BI 455	NMT Clinical Practicum II
BI 456	NMT Clinical Practicum III
BI/CH 453	Radiopharmaceuticals
BI/CH 457	Clinical Nuclear Medicine Technology I
BI/CH 458	Clinical Nuclear Medicine Technology II

Students in the Nuclear Medicine Technology program may also major in chemistry, natural science or physics.

Graduate Program

Master of Science in Biology

The M.S. program in biology is designed to broaden the matriculant's understanding of the biological sciences and to prepare for professional careers and doctoral study.

Admission Requirements: General admission requirements. The program is open to all who possess a substantial background at the undergraduate level. The applicant must have a quality point average of 3.0 in all course work within the major at the junior and senior collegiate level.

Requirements of the Program:

BI 990 Seminar in Biology: 3 credits
BI 995 Research in Biology: 6 credits

Approved biology electives: minimum 24 credits

In addition, reading competency in a language other than the candidate's native tongue or computer science proficiency or statistics proficiency is required. A minimum score of 500 on the Graduate Study Foreign Language Test of the Educational Testing Service is required to establish language competency. Students electing to satisfy computer science or statistics proficiency must meet the requirements established by the Natural and Earth Sciences Department in conjunction with the Department of Mathematics and Computer Science. Proficiency will be determined by the candidate's performance on a competency examination certified by the guidance committee or by the completion of a program of study approved by the committee with a minimum grade of B.

Thesis: The candidate must complete an acceptable thesis **or** paper submitted in publishable format based upon original research. The thesis will be defended by the candidate in an oral examination while the paper will require acceptance and approval by the candidate's guidance committee.

Chemistry

Professors: Cooper, Ferguson, Merken, Zoll-Resnek
Associate Professor: Wheaton

The chemistry program provides education and training in chemistry to students whose interests in the field range from a desire to learn something about it as part of their general education to an intent to pursue a career in chemistry, such as industrial chemistry, or a related field such as medicine, physics, biology, allied health, or environmental science.

Requirements for a Major in Chemistry: 30 credits

CH 120 and CH 121	General Chemistry I and II
CH 201 and CH 202	Organic Chemistry I and II (Lectures)
CH 203	Organic Chemistry Laboratory I

CH 210	Chemical Analysis: An Introduction to Modern Methods
	or
CH 470	Instrumental Analysis
CH 301 and CH 302	Physical Chemistry I and II (Lectures)
CH 303	Physical Chemistry Laboratory I

A minimum of one additional course chosen from the following:

CH 204	Organic Chemistry Laboratory II
CH 210	Chemical Analysis: An Introduction to Modern Methods
CH 304	Physical Chemistry Laboratory II
CH 410	Biochemistry I
CH 411	Biochemistry II
CH 415	Nucleic Acids Biochemistry
CH 420	Qualitative Organic Analysis
CH 430	Advanced Inorganic Chemistry
CH 450	Special Topics in Physical Chemistry
CH 460	Natural Products
CH 470	Instrumental Analysis
CH 480	Internship in Chemistry
CH 490	Independent Study in Chemistry

In addition, majors are expected to complete the following ancillary courses:

MA 200 and MA 201	Calculus I and II
PY 115 and PY 116	General Physics I and II
or	
PY 120 and PY 121	Physics I and II

Requirements for a Major in Chemistry, Concentration in Nuclear Medicine Technology: See program description under Biology.

Requirements for a Minor in Chemistry: 18 credits

CH 120 and CH 121	General Chemistry I and II

Ten (10) additional credits in 200 or higher level chemistry courses

Geography and Geology

Professor: Gould
Associate Professors: Hunt, Thompson
Assistant Professors: Hurd, Lingner

Geography is concerned with the interrelationships of man in his environment. It is a dynamic discipline investigating processes in the physical environment and analyzing the location of man's economic, political, and social activities. Students learn to use tools for analysis of contemporary problems in environmental systems. The program in geography and geology offers a number of courses leading to a major in the field of geography. A minor in geography and a concentration in geography and environmental studies are available to interested students. Gamma Theta Upsilon, the national honor society in geography, is available to distinguished majors.

Requirements for a Major: 30 credits including the following required courses:

GE 101 Physical Geography: The Physical Environment
GE 102 Cultural Geography: The Cultural Environment
GE 210 Geography of North America

Two courses in cartography

At least one advanced course in each of the following areas:

Physical Geography
Cultural Geography
Regional Geography

Two geography electives

No more than 45 credits will be accepted toward the degree without the consent of the department. Students may take a concentration in either physical or cultural geography by completing the basic requirements and completing 18 credits in the discipline.

Requirements for a Minor: 18 credits including

GE 101 Physical Geography: The Physical Environment
GE 102 Cultural Geography: The Cultural Environment
GE 210 Geography of North America

One elective each in physical, cultural, and regional geography

Natural Science and Physics

Professor: Garrett
Associate Professors: Belanger, Dick
Assistant Professor: Hicks

The study of physics and natural science affords an opportunity to discover scientific fundamentals as part of a general education. Students can obtain preparation for technical employment opportunities or graduate study. The latter is considered essential for a career in physics.

Requirements for a Major in Physics: 30 credits including

PY 120, PY 121, PY 122 Physics I, II, and III
PY 201 and PY 202 Mathematical Physics I and II
PY 210 Mechanics I
PY 230 Electricity and Magnetism I

Additionally, the physics major must take a minimum of one year of calculus and one year of chemistry.

Requirements for a Major in Natural Science: 38 credits selected to provide the following minimum distribution:

Two courses in mathematics
Four courses in any **one** science
Two courses in each of any other two sciences
NS 400 Natural Science Seminar

Requirements for a Major in Natural Science or Physics, Concentration in Nuclear Medicine Technology: See program description under Biology.

Requirements for a Minor in Physics: 18 credits in Physics including either:

PY 115 and PY 116	General Physics I and II
or	
PY 120, PY 121, PY 122	Physics I, II, and III

Requirements for a Minor in Natural Science: 18 credits, at least 6 in different sciences.

Requirements for a Concentration in Energy Studies: This concentration offers two options, Applied Energy Science, and Management and Design. Students are urged to plan the sequence of courses in consultation with their advisors.

Graduate Program

Master of Education, Concentration in Natural Science

Admission Requirements: General admission requirements.

Requirements of the Program:

Education foundation courses: 9 credits

ED 996	Research and Evaluation
ED 997	Advanced Philosophical Foundations of Education
ED 998	Advanced Psychological Foundations of Education

Interdisciplinary science courses: 15 credits
Education electives: 9 credits

Comprehensive Examination: Each candidate must take and pass a comprehensive examination in Natural Science.

Nursing

Chair: Goodman

Professors: Alexander, Brown, Campaniello, Goodman, Lovering
Associate Professor: Giguere
Assistant Professors: Hall, McMullen, Rucki
Instructor: Campbell

Accredited by the National League for Nursing; member of National League for Nursing (Council of Baccalaureate and Higher Degree Programs), American Association of Colleges of Nursing, Massachusetts Association of Colleges of Nursing, New England Organization for Nursing.

Generic Track

The program offers a curriculum providing the opportunity for the attainment of professional status as a beginning practitioner of nursing within the health care system.

Admission Requirements: Applicants to the program must comply with all admission requirements and procedures of Worcester State College as established by the Board of Regents of Higher Education. Once enrolled in the College as pre-nursing majors, students apply for acceptance into the nursing major during the second semester of the freshman year.

Requirements for a Major: All nursing students must meet the prerequisite requirements of the upper division nursing major including:

BI 161 and BI 162	Human Anatomy and Physiology I and II
BI 204	Microbiology
BI 374	Pathophysiology
CH 110 and CH 111	Introduction to General, Organic and Biochemistry I and II
CH 240	Pharmacology
HE 120	Health and Nutrition
MA 250	Introduction to Statistics
NU 200	Introduction to Professional Nursing I
NU 210	Introduction to Professional Nursing II
PH 130	Ethics
PS 110	General Psychology I
PS 120	Human Development
	or
PS 210	Child Growth and Development
SO 100	Introduction to Sociology
SO 215	Medical Sociology
	or
SO 220	Sociology of the Family

Students in the Nursing major must demonstrate competency in Speech and Computer Applications or they will be advised to take said course(s).

Generic program applicants must have a minimum quality point average of 2.0 in the natural sciences in order to be admitted to the sophomore level nursing courses. This excludes the use of the pass/fail option for these courses.

Requirements for Upper Division Major: 48 credits

NU 300	Introduction to Nursing Science
NU 310	Nursing Science I
NU 315	Group Communication Seminar I
NU 340	Nursing Science II
NU 415	Group Communication Seminar II
NU 430	Research Seminar
NU 440	Nursing Science III
NU 445	Group Communication Seminar III
NU 450	Leadership in Nursing
NU 460	Nursing Science IV

All Nursing courses must be taken in sequence.

Registered Nurse Track

This program is for registered nurse and graduate nurse applicants seeking to build upon their educational and professional experience. The department offers a curriculum providing the opportunity for attainment of professional status as a fully functioning member within the health care system.

Admission Requirements: Admission to Worcester State College is required prior to admission to the Nursing Department. Applicants must also:

1. submit a photocopy of current license to practice nursing in the Commonwealth of Massachusetts. If a graduate nurse but not yet an RN, evidence of the date of graduation from the AD or diploma program.
2. present transcripts showing successful completion of 60 undergraduate credits either from an accredited college, university or through CLEP examinations.
3. demonstrate successful completion of prerequisite placement examinations;
4. provide a reference from a) the most recent employer, and b) the administrator of the basic program; c) if State Board Examinations have not been completed, then an additional reference from a nursing school faculty member;
5. present evidence of current professional liability insurance;
6. present evidence of recent D.T. booster, tuberculin test, German measles immunity, and physical examination.

All applicants must meet the following prerequisites for the nursing major:

BI 161 and BI 162	Human Anatomy and Physiology I and II
BI 204	Microbiology
BI 374	Pathophysiology
CH 110 and CH 111	Introduction to General, Organic and Biochemistry I and II
CH 240	Pharmacology
HE 120	Health and Nutrition
MA 250	Introduction to Statistics
PH 130	Ethics
PS 110	General Psychology I
PS 120	Human Development
	or
PS 210	Child Growth and Development
SO 100	Introduction to Sociology
SO 215	Medical Sociology
	or
SO 220	Sociology of the Family

Nursing Placement Examinations

Students in the nursing major must demonstrate competency in Speech and computer application or they will be advised to take said course(s). Students receive the equivalent of 11 credits for the successful completion of the testing program.

Requirements for Upper Division Major: 37 credits

NU 315	Group Communication Seminar I
NU 330	Introduction to Professional Nursing III
NU 340	Nursing Science II
NU 415	Group Communication Seminar II
NU 430	Research Seminar
NU 440	Nursing Science III

NU 445	Group Communications Seminar III
NU 450	Leadership in Nursing
NU 460	Nursing Science IV

All nursing courses must be taken in sequence.

Social and Behavioral Sciences

Chair: Ashton

Psychology
Sociology

Psychology

Professors: Allard, Ashton, Cummings, Jones, Matheson, Nash
Associate Professors: Daly-Boxshus, Desrosiers, Guarini, O'Connor
Assistant Professors: Kimball, Ostenson

Psychology courses acquaint students with basic principles of learning, motivation, development, adjustment, and interaction and thereby provide a foundation for effective living and a background for a wide variety of career opportunities. The undergraduate major prepares students for graduate study in specialized fields of psychology, while the available career concentrations in industrial psychology, psychology of developmental disabilities, and psychology of mental health services in many cases prepare students for entry-level jobs. Psi Chi, the national honor society in psychology, is available to outstanding majors.

Admission Requirements: Admission is open to any student who is interested in psychology and who can maintain a 2.0 quality point average in the required and elective psychology courses.

Requirements for a Major: 30 credits up to maximum of 48 including:

PS 110 and PS 111	General Psychology I and II
PS 200	History and Systems of Psychology
PS 300	Psychological Statistics
PS 305	Psychological Methods

15 credits in psychology electives

Requirements for a Major in Psychology, Concentration in Mental Health Services: 36 credits. This concentration prepares graduates for employment in agencies serving mental health needs of special populations, including retarded, addicted, and emotionally impaired. In addition to the five core psychology courses, the following courses are required.

PS 240	Abnormal Psychology
PS 330	Theories of Personality
PS 340	Introduction to Psychometrics
PS 400	Internship in Psychology (3 semester hours)
PS 435	Clinical Psychology

Two elective psychology courses

Requirements for a Major in Psychology, Concentration in Industrial Psychology: 39 credits. The Industrial Psychology concentration is for those

students who desire to focus mainly on organizational settings by applying psychological theory and methodology to the solution and training to employer-employee interactions to organizational development. The program is designed as preparation for entry-level career jobs or specialization in Industrial/ Organizational graduate studies. In addition to the five core psychology courses, the following courses are required:

PS 250	Social Psychology
PS 285	Motivation
PS 340	Introduction to Psychometrics
PS 350	Group Dynamics
PS 360	Industrial Psychology
PS 400	Intership in Psychology

Senior Seminar (post-internship or concurrent with internship)
One psychology elective

Requirements for a Minor: 18 credits including:
PS 110 and PS 111 General Psychology I and II
12 credits in psychology electives

Requirements for a Minor with a Concentration in Developmental Disabilities: 19-21 credits. This minor is intended for students whose vocational goals include work with the developmentally disabled. Required courses include:

PS 110 and PS 111	General Psychology I and II
PS 210	Child Growth and Development
	or
PS 215	Psychology of Adolescence
PS 310	Introduction to the Study of Exceptional Children
PS 380	Physiological Psychology
PS 485	Introduction to Neuropsychology
PS 400	Internship in Psychology

Requirements for a Minor with a Concentration in Industrial Psychology: 21 credits including:

PS 110 and PS 111	General Psychology I and II
PS 285	Motivation
PS 300	Psychological Statistics
	(or the mathematical equivalent)
PS 340	Introduction to Psychometrics
PS 350	Group Dynamics
PS 360	Industrial Psychology

Sociology

Professors: Goss, Khleif, Pizziferri
Associate Professors: Brooker, Zelman
Assistant Professor: Zeadey

The sociology curriculum is designed to provide students with an appropriate frame of reference, through the systematic study of human society, for both social participation and the scientific evaluation of human behavior. The major begins the preparation of students who plan careers in sociology or related areas such as social work.

Admission Requirements: Admission to the sociology major is based on maintaining acceptable grades in the general foundation requirements and interest in the field of sociology. Interested students should apply in person to the chair of the Social and Behavioral Sciences Department. Upon admission, each major is assigned an advisor and receives an orientation in sociology.

Requirements for a Major in Sociology: 30 credits including

SO 100	Introduction to Sociology
SO 270	Social Theory I
SO 280	Research Methods of Sociology

A maximum of two courses at the 100 level
A minimum of three courses at the 300 and/or 400 level

All courses taken beyond the minimum requirements will be credited as electives.

Requirements for a Minor: 18 credits including

SO 100	Introduction to Sociology
	or
SO 110	Cultural Anthropology

All prerequisites for 300 and 400 level courses must be met if the student wishes to elect courses at these levels.

7. Course Descriptions

Undergraduate Course Numbering

The 100 level offerings are introductory and other courses open to freshmen, including those appropriate for the satisfaction of the distribution requirement (see page 21). The 200 level courses are intermediate and may require prerequisite courses. The 300 level courses are advanced and require prerequisite courses. The 400 level courses are generally for seniors and include seminars, independent study, and internships.

The description of each undergraduate course is followed by a category number. Category 1 courses are offered every year. Category 2 courses are offered every two or three years. Category 3 courses are offered when there are sufficient student demand and available staff.

Graduate courses (900 level) are open only to post-baccalaureate students.

All courses carry three credits unless otherwise indicated.

Art

AR 100 Creative Painting

Various schools of painting are studied with particular attention to personal applications.
Category 1.

AR 101 Art Forms

The theory and techniques of past and present art movements.
Category 1.

AR 102 Drawing in Various Media

The student becomes acquainted with a variety of techniques used in drawing and in artistic applications.
Category 1.

AR 103 Watercolor I

Students deal with various techniques used by water colorists, past and present; individual exploration encouraged.
Category 3.

AR 104 Figure Drawing

Drawing of the human figure; use of pencil, conte, pastel, pen and ink, watercolor, etc. (A model fee will be charged.)
Category 1.

AR 105 Design I

The use of form, line, color, and texture as design elements is studied. Images and techniques will be analyzed.
Category 1.

AR 106 Creative Crafts

Craft techniques from many cultures, stressing individual problem solving.
Category 1.

AR 107 Sculpture I

Basic sculpture techniques; clay and terra cotta studies of the head and figure, plaster, piece molds.
Category 1.

AR 108 Mixed Media

A variety of materials in both two and three dimensional forms. Representational and abstract works.
Category 1.

AR 109 Printmaking

Basic printmaking; etching and relief printmaking. Prints from major artists are investigated.
Category 3.

AR 110 Art History: Stonehenge to the Renaissance

Art styles and movements from prehistoric man to the Renaissance; painting, sculpture, architecture.
Category 1.

AR 111 Art History: The Renaissance to Picasso

Art from the Renaissance to the present; the effects of the social and intellectual climate on art.
Category 3.

AR 112 History of Medieval Art

Western European art (c. 800 - c. 1400) and the effects of the social and intellectual climate on art.
Category 3.

AR 113 History of Renaissance Art

The development of art in Italy and northern Europe (c. 1400 - c. 1700) is traced; social and intellectual trends affecting the artist.
Category 2.

AR 114 Foundations of Modern Art

Influential art movements of the 19th century and their effects on the first two decades of the twentieth century.
Category 3.

AR 115 Art of the Twentieth Century

Surrealism and other art movements in Europe and America from the end of the first World War to the present.
Category 3.

AR 120 Environmental Design

Analyzes urban area planning and elements responsible for the visual esthetics of a city through individual project building.
Category 1.

AR 121 History of Modern Architecture

Major developments in 19th and 20th century architecture in Europe and America.
Category 1.

AR 125 Art in the Elementary School

The function of art in the elementary school as well as contemporary practices in art education.
Category 2.

AR 200 History of American Art

Painting, sculpture, architecture, and urban planning from pre-revolutionary times to the present.
Category 3.

AR 201 History of Urban Form

The physical form of communities and cities from ancient times to contemporary planning.
Category 3.

AR 209 Silkscreen Printing

Silkscreen printing with traditional methods forming the basis of the course; prints by contemporary artists.
Category 3.

AR 300 Creative Painting II

Prerequisite: AR 100 or equivalent

Painting techniques; stress on individual direction and growth. Appropriate historical examples of painting.
Category 3.

AR 301 Portrait Painting

Prerequisite: AR 100 or equivalent

Various painting styles and psychological aspects of the face are used to approach the study of the portrait.
Category 2.

AR 304 Advanced Figure Drawing

Prerequisite: AR 104

Art studies of the human figure in charcoal and pastel; preliminary studies for painting. (A model fee will be charged.)
Category 2.

AR 305 Design II

Prerequisite: AR 105

Advanced problems in two- and three-dimensional design.
Category 2.

AR 307 Sculpture II

Prerequisite: AR 107

Work in various techniques includes metal and wood sculpture. (Students must provide their own wood chisels.)
Category 3.

AR 310 Special Topics

Prerequisite: One art course or consent of instructor

Particular art topics are examined according to the interest of the professor.
Category 3.

AR 400 Independent Study in Art

Prerequisite: Limited to art minors with a minimum of 12 credits in art; consent of instructor

An opportunity for further study in a special field of interest under faculty supervision.
Category 1.

Biology

Undergraduate Courses

BI 101 General Biology

Unifying principles in biology; diversity and evolution of plant and animal life at cellular and organismic levels. Lectures and laboratory.
Category 1. 4 credits.

BI 111 Social Biology

This course considers the interface between current biological technologies and the social, cultural, legal, and moral postures of modern man.
Category 1.

BI 112 Diseases and Mankind

Epidemiological approach to diseases of ancient and modern man; the impact on history, religion, science, art and philosophy.
Category 1.

BI 113 Botanical World

Considers entire plant kingdom — especially endemic trees, flowers, algae, fungi (including tree walks and use of diagnostic keys).
Category 2.

BI 114 Plants and Human Affairs

Man's dependence upon plants and their influence on civilization and its art, religions, literature, folklore, medicine, and human behavior.
Category 2.

BI 115 Zoological World

Considers animal kingdom—especially identification and natural history of endemic marine, terrestrial, and avian forms (including field trips and bird walks).
Category 3.

BI 151 General Botany

The plant kingdom; taxonomy, natural history, anatomy, and evolutionary relationships; identification, classification, and dissection from macro- and microscopic viewpoints; three lecture hours and three laboratory hours per week.
Category 1. 4 credits.

BI 152 General Zoology

Concepts in animal biology and animal diversity with phylogenetic relationships, comparative structure-function analysis of selected animals. Lectures and laboratory.
Category 1. 4 credits.

BI 161 Human Anatomy and Physiology I

Considers human pre-tissue biology, tissues, integumentary, nervous, special senses, endocrine, skeletal, muscular systems. Three lecture hours and three laboratory hours per week.
Category 1. 4 credits.

BI 162 Human Anatomy and Physiology II

Considers digestive, respiratory, cardiovascular, excretory systems; water and electrolyte balance, reproduction and embryogeny. Three lecture hours and three laboratory hours each week.
Category 1. 4 credits.

BI 171 Basic Kinesiology

Structure and function of human skeletal muscles in relationship to motion and general body mechanics under normal and stress conditions.
Category 3.

BI 172 Exercise Physiology

The functions of the systems of the human body during exercise and factors that may modify these functions.
Category 2.

BI 201 Introduction to Cell Biology

Prerequisites: BI 151 and BI 152

The ultra structure, cytochemistry, and functions of cell organelles as related to cell bioenergetic and nuclear phenomena. Three lecture hours and two laboratory hours per week.
Category 1. 4 credits.

BI 202 Principles of Ecology

Prerequisites: BI 151 and BI 152

Basic ecological theory relating to organism-environment interactions; population dynamics, and ecosystems. Three lecture hours and two laboratory hours per week.
Category 1. 4 credits.

BI 203 Genetics

Prerequisites: BI 151 and BI 152

Introductory genetics with examples of human inheritance and recent developments in genetic engineering. Three lecture hours and two laboratory hours per week.
Category 1. 4 credits.

BI 204 Microbiology

Prerequisites: Introductory chemistry and biology courses

The cytology, metabolism, and genetics of bacteria. Immune responses and control of microorganisms are stressed. Three lectures and one three hour laboratory per week.
Category 1. 4 credits.

BI 301 Invertebrate Zoology

Prerequisites: BI 151 and BI 152

Considers anatomy, taxonomy (including selected articles of the International Code of Zoological Nomenclature), natural history, and evolutionary relationships of selected invertebrate phyla. Three lecture hours and three laboratory hours per week.
Category 2. 4 credits.

BI 302 Entomology
Prerequisite: BI 152

Considers insects and their allies, chemical and biological control, and special references to agricultural pests and medical entomology. Lectures and laboratory.
Category 2. 4 credits.

BI 303 Parasitology
Prerequisite: BI 152

Basic concepts in symbiology, life cycles, epidemiology, disease development, control and prevention of selected human parasites. Lecture and laboratory.
Category 2. 4 credits.

BI 304 Comparative Vertebrate Anatomy
Prerequisites: BI 151 and BI 152

Considers prochordate and chordate taxonomy and phylogeny; systematic morphological comparison of representative chordates to establish homology, analogy, and evolution. Three lecture hours and three laboratory hours per week.
Category 2. 4 credits.

BI 305 Embryology
Prerequisites: BI 151, BI 152 and two additional biology courses

Morphogenesis of selected chordate embryos; principles of differentiation and evolution as interpreted in animal taxa. Three lecture hours and three laboratory hours per week.
Category 2. 4 credits.

BI 311 Microtechniques
Prerequisites: BI 151 and BI 152

Practical experience in making permanent microscope slides by the paraffin embedment method. Three lecture hours and three laboratory hours per week.
Category 2. 4 credits.

BI 312 Biological Techniques
Prerequisites: BI 151 and BI 152

Literature, techniques, and basic instruments of science; design, methods, and limitations of applied science are discussed; laboratory demonstrations.
Category 2. 4 credits.

BI 313 Histology
Prerequisites: BI 151 and BI 152

The structure and function of animal tissues. Each student is required to prepare tissues using histological methods. Three lectures and a three hour laboratory per week.
Category 2. 4 credits.

BI/NS 315 Neuroanatomy and Physiology
Prerequisites: BI 161 and BI 162

Structural and functional organization of the central and peripheral nervous system. Principles of normal and abnormal transmission, integration, and storage of information in neuronal pathways.
Category 1. 4 credits.

BI 321 Comparative Animal Physiology
Prerequisites: BI 151 and BI 152

A comparison of selected physiological functions as seen and interpreted in various animal taxa.
Category 2.

BI 322 Mammalian Physiology
Prerequisites: BI 151 and BI 152

Detailed consideration of circulatory, respiratory, muscle, and nerve physiology in mammals, including man. Laboratory concentrates on physiological measurement. Three lecture hours and three laboratory hours per week.
Category 2. 4 credits.

BI 324 Endocrinology
Prerequisites: BI 151, BI 152, BI 161, CH 120 or BI 371

The role of endocrine glands in the normal integration of animals; mechanisms of hormone action, function, and interrelationships. Three lecture hours and three laboratory hours per week.
Category 2. 4 credits.

BI 331 Marine Biology
Prerequisites: BI 151, BI 152 and BI 301

Considers the marine environment, its flora and fauna, distribution and production of plankton-nekton-benthos; zoogeography, bioeconomic factors and potential. Three lecture hours and three laboratory hours per week.
Category 2. 4 credits.

BI 333 Vertebrate Natural History Ectotherms
Prerequisites: BI 151, BI 152 and BI 202

Life histories, adaptations, distribution, systematics, and economic importance of ectothermic (cold-blooded) vertebrates (fish, amphibians, and reptiles) in northeastern U.S. Three lecture hours and three laboratory hours per week.
Category 2. 4 credits.

BI 334 Wildlife Investigational Techniques
Prerequisites: BI 151, BI 152 and BI 202

Considers procedures for collection and analysis of field and laboratory data on vertebrate game populations useful to wildlife biologists. Three lecture hours and three laboratory hours per week.
Category 2. 4 credits.

BI 341 Mycology
Prerequisite: BI 152

The morphology, cytology, and evolution and classification of the fungi. Three lecture hours and three laboratory hours per week.
Category 2. 4 credits.

BI 342 Plant Physiology
Prerequisites: BI 151 and BI 152

Fundamentals of plant processes — nutrition, metabolism, growth, development and responses. Laboratory.
Category 2. 4 credits.

BI 351 Biology of Aging
Prerequisites: BI 151 and BI 152 or consent of instructor

Considers characteristics of the aging process utilizing the newest theories based upon dynamics, function and metabolic regulations, disease and the acceleration of the aging process.
Category 3.

BI 370 Darwinian Revolution
Prerequisites: Two courses in biology

Philosophical, religious, and social impacts of Darwin's theory of evolution by the process of natural selection. An interdisciplinary perspective.
Category 2.

BI 371 Molecular Biology
Prerequisites: BI 151, BI 152 and BI 204

Genesis and function of classical biology with stress on molecular form; evolution, exploitation, and ramification of molecular structure in cells, organs, and organisms. Three lecture hours and three laboratory hours per week.
Category 2. 4 credits.

BI 372 Immunology
Introduction to cellular defense mechanisms in health and disease; antigen-antibody reactions, human immune responses.
Category 2. 4 credits.

BI 373 Radiation Biology
Prerequisites: BI 151, BI 152 or BI 162

Basic theories of interaction of ionizing radiations with living and non-living matter; industrial and clinical applications.
Category 2.

BI 374 Pathophysiology
Prerequisites: BI 161, BI 162

Considers altered biophysiologic responses of selected systems in the human body.
Category 1.

BI 400 Medical Terminology
Prerequisite: 30 college credits

Provides introduction to medical scientific terminology as a language and as a communication art.
Category 1.

BI 401 Selected Topics in Biological Sciences
Prerequisites: Consent of department and instructor

Each topic is a lecture and/or laboratory course in a selected area of the biological sciences presented by a departmental instructor and/or guest lecturers when appropriate; topic to be announced in advance.
Category 3. 1-4 credits.

BI 402 Biological Problems
Prerequisites: Consent of department and instructor

Advanced semi-independent study (by qualified upper-level Biology majors) of an approved biological problem. Faculty supervision required.
Category 3. 1-4 credits.

BI 403 Biology Internship
Prerequisite: Consent of department

Intended for qualified, upper-level biology majors.
Category 3. 1-6 credits.

BI 404 Biology Seminar
Prerequisite: Consent of department

Preparation and presentation of biological topics, chosen with the advice and consent of a faculty advisor.
Category 1. 2 credits.

BI/CH 410 Biochemistry I
Prerequisite: CH 201, CH 202, CH 301, CH 302, or consent of instructor

The chemistry of proteins, nucleic acids, carbohydrates, and lipids; enzymes, biological oxidations; and correlations in intermediary metabolism. Three hours of lecture and three hours of laboratory per week.
Category 2. 4 credits.

BI/CH 411 Biochemistry II
Prerequisite: BI/CH 410

The generation and storage of metabolic energy; biosynthesis of macromolecular precursors, DNA, RNA, and protein; and biochemical regulation. Three hours of lecture and three hours of laboratory per week.
Category 2. 4 credits.

BI/PY 451 Nuclear Instrumentation I
Prerequisite: Consent of NMT coordinator

The structure, functions, and interactions of particulate and nonparticulate radiations with matter; detection, calibration, dosage, and statistical methods.
Category 1. 4 credits.

BI/PY 452 Nuclear Instrumentation II
Prerequisite: Consent of NMT coordinator

Designed to further the skills of operating, calibrating, and performing routine maintenance on scanners, gamma cameras, well-counters, and liquid scintillation counters.
Category 1. 4 credits.

BI/CH 453 Radiopharmaceuticals
Prerequisite: Consent of NMT coordinator

Fundamental concepts of radiopharmaceutical production and use; includes basic radiochemistry.
Category 1. 4 credits.

BI 454 NMT Clinical Practicum I
Prerequisite: Consent of NMT coordinator

Students will spend several days a week in a hospital observing the ongoing activities and procedures of a nuclear medicine facility.
Category 1. 10 credits.

BI 455 NMT Clinical Practicum II
Prerequisite: Consent of NMT coordinator

Guided and supervised by clinical instructors, students begin to acquire manual skills essential to nuclear medicine technology; and in performing all routine nuclear medicine examination and laboratory procedures.
Category 1. 6 credits.

BI 456 NMT Clinical Practicum III
Prerequisite: Consent of NMT coordinator

Upon completion of this practicum, students should be skilled in performing both routine and non-routine nuclear medicine examinations and laboratory procedures.
Category 1. 4 credits.

BI/CH 457 Clinical Nuclear Medicine Technology I
Prerequisite: Consent of NMT coordinator

Considers why a specific test is indicated; which radiopharmaceutical is preferred; and how the basic image appearance, and/or numerical data may be altered by pathological states.
Category 1. 4 credits.

BI/CH 458 Clinical Nuclear Medicine Technology II
Prerequisite: Consent of NMT coordinator

Case presentations using formulas, charts, tables, and calculations to arrive at examination parameters such as dose, number of counts, speed of instrument, etc.
Category 1. 4 credits.

Graduate Courses

BI 905 Historical Perspectives in Biology
The nature, processes, and research approaches of the major biological discoveries and emerging new paradigms from the 17th century to present.

BI 910 Public Health Parasitology
Biology, epidemiology, disease processes, control and prevention of human parasites. Concentrates on selected protozoan, helminth, and arthropod organisms. Includes three hour laboratory.
4 credits.

BI 915 Topics in Advanced Botany
Explores and reviews specialized topics in the life of plants. Includes three hour laboratory.
4 credits.

BI 920 Population Biology

Analyzes population density, growth, regulation, and energy relationships. Population interactions, organization, and evolution are stressed.

BI 930 Biological Chemistry

Concerns the physical, chemical, and biological properties and metabolism of carbohydrates, proteins, lipids, DNA, and RNA.

BI 935 Biochemical Techniques

Prerequisite: BI 930

Topics include the isolation and characterization of biochemical compounds with emphasis on nucleic acids and proteins. One hour of lecture and three hours of laboratory.

BI 940 Reproductive Physiology

Concerns the influence of sex hormones on the reproductive system, beginning with embryogenesis and early maturation and extending into the areas of fertilization, pregnancy, gestation, parturition, and lactation. Includes three hour laboratory.
4 credits.

BI 945 Neuroendocrinology

Emphasizes the hypothalamo-hypophysial system in mammals together with its influence on the central nervous system.

BI 950 Physiological Ecology

Considers the physiological adjustments which animals make in response to environmental factors; emphasizes the physiological basis of animal evolution and distribution.

BI 955 Herpetology

Concerns the structural and functional characteristics of amphibians and reptiles, their origin and evolution, their ecological relationships, and their distribution and natural history. Includes three hour laboratory.
4 credits.

BI 960 Biology of Symbiosis

Nutritional, metabolic, and evolutionary mechanisms of partnerships in nature with emphasis on the universality of symbiosis. Includes three hour laboratory.
4 credits.

BI 990 Seminar in Biology

Study and discussion of current researches, books, and periodicals in the field of biology; includes reports of research in progress. Required of all graduate degree candidates.

BI 995 Research in Biology

Original research in biology under faculty supervision. Requires an acceptable thesis or paper in publishable format. Required of all degree candidates.
6 credits.

Business Administration

Undergraduate Courses

BA 100 Introduction to Business

Introduction to basic concepts related to business practices; includes examination of local, regional, and national organizations in the business world.
Category 2.

BA 110 Fundamentals of Accounting I

Principles, concepts, procedures, and techniques of financial accounting necessary for the preparation, understanding, and interpretation of accounting information.
Category 1.

BA 111 Fundamentals of Accounting II

Prerequisite: BA 110

Continuation of topics covered in BA 110.
Category 1.

BA 200 Management and Organizational Behavior

Prerequisite: BA 100 or consent of instructor

Study of management practices and behavior in organizational settings. Emphasis on introduction to managerial principles, concepts and fundamentals.
Category 1.

BA 250 Application of Analytical Managerial Techniques

Prerequisites: BA 100, BA 110, CS 120

The development of quantitative business applications in functional areas; accounting, finance, marketing, and operations including budgeting, break-even and statement analysis.
Category 1.

BA 300 Problem Solving in Organizations

Prerequisite: BA 200

Continuation of concepts covered in BA 200 fundamentals course. Some application of topics to situations.
Category 1.

BA 301 Theories and Cases in Administration
Prerequisite: BA 300

Advanced study of the functions and processes of management. Application of topics covered in BA 300.
Category 3.

BA 305 Organizational Dynamics
Prerequisite: BA 200

A study of behavior principles which underlie the prevention and solution of problems in both individual and group contexts.
Category 1.

BA 306 Principles of Personnel Management
Prerequisite: BA 305

An examination of the functional areas of personnel management regarding EEO/AA, recruiting and selection, training and development, compensation administration.
Category 3.

BA 310 Managerial Accounting
Prerequisites: BA 110, BA 111, BA 200

Analysis, interpretation, and use of accounting data for effective managerial planning, control, and decision-making.
Category 1.

BA 312 Operations Management I
Prerequisite: BA 200

Applied analysis of operations in service and production systems using quantitative models and calculus; inventory, work measurement, scheduling, quality control.
Category 1.

BA 315 Quantitative Analysis and Information Systems
Prerequisite: CS 120 or consent of instructor

Introduction to basic quantitative analysis applied to management planning and operations systems. Includes business information systems and applications.
Category 1.

BA 316 Financial Management
Prerequisite: BA 111

Financial analysis, working capital management, and basics of capital budgeting.
Category 1.

BA 318 Principles of Marketing
Prerequisites: BA 200, MA 250

Overview of the full range of activities involved in marketing, develops an understanding of marketing principles, problems, and processes.
Category 1.

BA 320 Business Law I
Prerequisite: Consent of instructor

Introduction to legal concepts as applied to the study of contracts, personal property, sales, and the Uniform Commercial Code.
Category 3.

BA 321 Business Law II
Prerequisite: BA 320

Continuation of topics covered in BA 320. Study of laws of partnerships and corporations.
Category 3.

BA 360 Public Program Analysis
Prerequisite: BA 200

Focuses on the implementation and evaluation of governmental programs; why some work and others do not.
Category 1.

BA 361 Public Management
Prerequisite: BA 200 or consent of department

Emphasizes the key differences as well as the similarities between management practices in the private and public sectors.
Category 1.

BA 370 Intermediate Accounting I
Prerequisites: BA 110, BA 111

Accounting theory, principles, concepts, and procedures applied to balance sheet and income statement accounts. Presentation and interpretation of financial reports.
Category 1.

BA 371 Intermediate Accounting II
Prerequisite: BA 370

Continuation of BA 370.
Category 1.

BA 372 Advanced Accounting I
Prerequisite: BA 370

Mergers and consolidations; parent and subsidiary relationships; pooling of interests and purchases; fund accounting; price-level accounting.
Category 1.

BA 373 Advanced Accounting II
Prerequisite: BA 372

Special advanced topics including review of Accounting Research Bulletins of the AICPA.
Category 1.

BA 374 Cost Accounting
Prerequisites: BA 110, BA 111, BA 200

Accounting for costs in business enterprises. Emphasis placed on fundamental principles including job order, process, and standard costs.
Category 1.

BA 375 Federal Income Taxes I
Prerequisites: BA 370, BA 371

A study of federal income taxation as applied to individuals.
Category 1.

BA 376 Auditing
Prerequisites: BA 371, BA 372, BA 374

Basic auditing concepts and developments and their application to the examination, evaluation, and reporting of financial data.
Category 1.

BA 377 Federal Income Taxes II
Prerequisite: BA 375

Federal income taxes for corporations and partnerships.
Category 1.

BA 400 Management and Organizational Behavior I
Prerequisite: BA 305

Study of concepts, theory, research, and operational problems of organizational behavior; work groups and intergroup behavior models.
Category 3.

BA 401 Management and Organizational Behavior II
Prerequisite: BA 400

Continuation of topics covered in BA 400 with additional theory and case studies; behavioral science/ systems approach is taken.
Category 3.

BA 404 Advanced Topics in Financial Management
Prerequisite: BA 316

Advanced capital budgeting, capital structure, and long-term financing decisions, computer modeling using software packages, comprehensive cases in financial management.
Category 2.

BA 406 Trends in Marketing
Prerequisite: BA 318

Integrates all aspects of marketing theory through readings, case studies, class projects, individual projects, and computer simulation of marketing decisions.
Category 1.

BA 408 Operations Management II
Prerequisite: BA 312

Continuation of topics of BA 312 with focus on production planning and flow.
Category 3.

BA 409 Quantitative Analysis and Techniques I: Linear Models for Administration
Prerequisite: BA 315

Application of QA techniques to problems of linear programming, inventory models, and PERT-CPM networks.
Category 3.

BA 411 Purchasing, Materials Management, and Inventory Control
Prerequisite: BA 312

Detailed analysis of inventory control, including purchasing MRP, inventory control models, quality sampling, and transportation.
Category 3.

BA 415 Investment Analysis
Prerequisite: BA 316

Survey of investment vehicles, including stocks, bonds, real estate, commodities, mutual funds, and collectibles. Modern portfolio and valuation theories.
Category 2.

BA 416 Financial Markets and Institutions
Prerequisite: BA 316

Study of banks, investment banking, money markets, and the financial service industry as they affect long and short-term financing decisions.
Category 2.

BA 420 Marketing Research
Prerequisite: BA 318

Nature and scope of marketing research. Application of scientific methods, sources, and collection of data, reporting and evaluation.
Category 3.

BA 422 Retailing
Prerequisite: BA 318

Demand analysis, consumer behavior, and planning and control of the merchandising functions; retailing as a career.
Category 3.

BA 424 Advertising Management
Prerequisite: BA 318

Advertising from a marketing manager's perspective. Consumer, industrial, and professional promotion strategies with execution and control activities.
Category 3.

BA 426 Consumer Behavior
Prerequisite: BA 318

The analysis of the consumer decision process as it affects marketing management decisions. Major factors of influence in this process will be studied including culture, social class, family, and reference groups.
Category 3.

BA 428 Marketing to Industry and Government
Prerequisite: BA 318

Need identification, pricing policies, channels of distribution, selling and promotion to reach and satisfy the institutional consumer. Discussion of industrial and institutional buying behavior, bidding, and regulation.
Category 3.

BA 430 Administrative Practices and Management
Prerequisite: BA 305

Overview and analysis of human conduct in work-organization settings.
Category 3.

BA 432 Managing Career Development
Prerequisite: BA 305 or consent of instructor

Designed to train managers to assist employees in developing career perspectives, mid-career issues and concerns, and career issues for women and minorities.
Category 3.

BA 434 Management and Corporate Responsibility
Prerequisites: BA 200 and consent of department

The theoretical and practical relationships of corporate conflicts of interests, self-regulation, product liability, employee rights, etc. to management decisions.
Category 3.

BA 450 Health Systems in America
Prerequisite: BA 300, BA 305 or consent of instructor

A course focusing on the administration of institutions in the health area.
Category 1.

BA 462 Employee Relations in the Public Sector
Prerequisite: BA 361

A survey of practices in public personnel administration, emphasizing collective bargaining and the impact of unions.
Category 1.

BA 464 Government Budgeting Systems
Prerequisites: BA 111 and BA 361

A "hands on" approach; how budgets are prepared and used as tools for policy-making.
Category 1.

BA 474 Corporate Law
Prerequisite: BA 320

Corporate powers and corporate management. Designed for future corporate executives and accountants.
Category 3.

BA 480 Current Challenges to Management
Prerequisite: BA 200

The impact of governmental regulation on business and its response will be evaluated by unique debate-type format.
Category 1.

BA 481 Independent Study in Business Administration
Prerequisite: BA 305 or consent of instructor

Independent study in business administration, usually involving field work which is not an internship.
Category 1. 1-6 credits.

BA 482 Selected Topics in Business Administration
Prerequisites: BA 305, BA 316, BA 318, and consent of instructor

Selection of topics of mutual interest to the student and faculty.
Category 3. 1-6 credits.

BA 483 Internship in Health Administration
Prerequisites: BA 200, BA 450, and consent of department

Practical experiences in operations of health administration, internships within cooperative health facilities with on-site supervision and evaluation.
Category 1. 1-6 credits.

BA 484 Internship in Public Administration
Prerequisites: BA 361 and consent of instructor

An opportunity to gain practical experience in the operations of government under the supervision of agency personnel.
Category 1. 1-12 credits.

BA 485 Practicum in Public Management
Prerequisites: BA 361 and consent of instructor

Group field work on a major project designed to improve the performance of a specific government agency.
Category 1. 1-9 credits.

BA 486 Internship in Business Administration
Prerequisites: BA 305, BA 316, BA 318, and consent of department

Practical experience in operations of business. Internships within co-operative firms with on-site supervision and evaluation.
Category 1. 1-12 credits.

BA 490 Administrative Strategy Formulation and Implementation
Prerequisites: BA 316, BA 318 or consent of instructor

Capstone course drawing on information provided to students in other functional areas such as finance, marketing, general management, skill development.
Category 3.

BA 491 Independent Study in Health Administration
Prerequisites: BA 200, BA 450 or consent of instructor

Independent study in health, usually involving field work which is not an internship.
Category 1. 1-6 credits.

BA 492 Selected Topics in Health Administration
Prerequisite: BA 361 or consent of instructor

Selected topics in health administration of mutual interest to the student and faculty.
Category 3. 1-6 credits.

BA 493 Selected Topics in Government Administration
Prerequisites: BA 361 and consent of instructor

Recent developments in public administration of mutual interest to students and faculty.
Category 3. 1-6 credits.

Graduate Courses

BA 910 Managerial Economics for Administrators
Economics and operation of organizations; macro and micro theory, marginal analysis, price-output, and determinations.

BA 930 Behavioral Sciences for Administrators
Study of work-groups, intergroups, and individual behavior. Adapting human resource utilization concepts and theories, and other research findings.

BA 932 Operational Analysis and M.I.S.
Knowledge of management information systems including types, forms, uses, and costs. Decision-making, inventory, and PERT.

BA 935 Organizational Operations
Application of administrative tools to solution of logistic, operational, and production functions, utilization of technological assets.

BA 936 Financial Management
Application of administrative tools to problem analysis and solutions in finance; financial asset utilization.

BA 938 Marketing Management
Application of administrative tools to marketing functions from strategies to techniques.

BA 949 Administrative Policy Form and Strategy
Prerequisites: BA 930, BA 938 and one of the following: BA 910 or BA 935, or consent of instructor.

Capstone integrative course designed to develop administrative skills, and implementation of strategies for organizations.

Chemistry

Undergraduate Courses

CH 105 Nature of Chemical Change

The properties of matter viewed through simple reactions of familiar substances. Two lectures and a two-hour laboratory per week.
Category 1.

CH 110 Introduction to General, Organic, and Biochemistry I

An introductory survey of chemistry. Topics include atomic structure, chemical bonding and reactions, acid-base theory, introduction to organic chemistry. Three hours of lecture and three hours of laboratory per week.
Category 1. 4 credits.

CH 111 Introduction to General, Organic, and Biochemistry II

Prerequisite: CH 110

Continuation of CH 110. Topics include functional groups and reactions of organic compounds and topics in biochemistry such as carbohydrates, proteins, lipids, and metabolic pathways. Three hours of lecture and three hours of laboratory per week.
Category 1. 4 credits.

CH 120 General Chemistry I

Modern survey of chemistry. Topics include chemical equations, properties of gases, atomic structure, periodic table, chemical bonding, chemistry of carbon. Three hours of lecture and three hours of laboratory per week. CH 120 and CH 121 provide the foundations for further courses in chemistry.
Category 1. 4 credits.

CH 121 General Chemistry II

Prerequisite: CH 120

Continuation of CH 120. Topics include elements of thermodynamics, acids and bases, reaction rates, oxidation-reduction reactions, and electrochemistry. Three hours of lecture and three hours of laboratory per week.
Category 1. 4 credits.

CH 201 Organic Chemistry I (Lectures Only)

Prerequisites: CH 120, CH 121

Structure, reactions, mechanisms, and stereochemistry of the alkanes, alkenes, alkynes, dienes, alkyl halides. Introduction to aromatic chemistry.
Category 1.

CH 202 Organic Chemistry II (Lectures Only)
Prerequisite: CH 201

Continuation of CH 201. Reactions and mechanisms of aromatic chemistry; structures and reactions of alcohols, ethers, carboxylic acids, aldehydes, ketones.
Category 1.

CH 203 Organic Chemistry Laboratory I
Prerequisite: CH 201 taken previously or concurrently

Techniques of preparation, purification, and identification of aliphatic compounds. One four-hour laboratory per week.
Category 1. 2 credits.

CH 204 Organic Chemistry Laboratory II
Prerequisite: CH 203

Application of basic and more advanced techniques to increasingly complicated synthetic problems. One four-hour laboratory per week.
Category 1. 2 credits.

CH 210 Chemical Analysis: An Introduction to Modern Methods
Prerequisites: CH 120, CH 121

Introduction to modern methods of chemical analysis including gravimetry, acid-base and redoxtitrations, potentiometry, uv-visible and atomic absorption spectrophotometry, and gas and HPLC chromatography. Two hours of lecture and six hours of laboratory per week.
Category 1. 4 credits.

CH 220 Chemistry of Energy and the Environment
Prerequisites: CH 120, CH 121

Chemistry of the environment; chemical aspects of energy; and the environmental aspects of energy production and use.
Category 3.

CH 230 Foundations of Chemistry and Physics
Prerequisites: CH 120, CH 121, PY 120, PY 121, or consent of instructor

History, philosophy, methods, and concepts of physical sciences for science and non-science majors. Emphasizes an understanding of science and scientists.
Category 3.

CH 240 Pharmacology
Prerequisites: CH 110, CH 111, BI 161, BI 162

Modes of action of some of the major categories of drugs, their biological activities and responses within the human system.
Category 1.

CH 301 Physical Chemistry I (Lectures Only)
Prerequisites: CH 120, CH 121, MA 200, MA 201

A study of the first, second, and third laws of thermodynamics, and of chemical, solution, and phase equilibria. Three hours of lecture per week.
Category 1.

CH 302 Physical Chemistry II (Lectures Only)
Prerequisite: CH 301

Continuation of CH 301. Topics include chemical kinetics, quantum theory, chemical bonding, spectroscopy, and molecular structure. Three hours of lecture per week.
Category 1.

CH 303 Physical Chemistry Laboratory I
Prerequisite: CH 301 taken previously or concurrently

Laboratory deals with methods of physical measurement of chemical systems and their application to the determination of thermodynamic data. One four-hour laboratory per week.
Category 1. 2 credits.

CH 304 Physical Chemistry Laboratory II
Prerequisite: CH 302 taken previously or concurrently

Continuation of CH 303; project-oriented laboratory dealing with the study of reaction rates and mechanisms, electrochemistry, and molecular properties. One four-hour laboratory per week.
Category 1. 2 credits.

CH/BI 410 Biochemistry I
Prerequisite: CH 201, CH 202, CH 301, CH 302, or consent of instructor

The chemistry of proteins, nucleic acids, carbohydrates, and lipids; enzymes, biological oxidations; and correlations in intermediary metabolism. Three hours of lecture and three hours of laboratory per week.
Category 2. 4 credits.

CH/BI 411 Biochemistry II
Prerequisite: CH/BI 410

The generation and storage of metabolic energy; biosynthesis of macromolecular precursors, DNA, RNA, and protein; and biochemical regulation. Three hours of lecture and three hours of laboratory per week.
Category 2. 4 credits.

CH 415 Nucleic Acids Biochemistry
Prerequisites: CH 201, CH 202, CH 410 recommended

Structure and function of nucleic acids in prokaryotes and eukaryotes. Topics include nucleotide metabolism, replication, repair, and recombinant DNA techniques.
Category 1.

CH 420 Qualitative Organic Analysis
Prerequisites: CH 201, CH 202

Analysis of organic compounds including separation of mixtures and identification of compounds by their physical properties and preparation of their derivatives. Two hours of lecture and four hours of laboratory per week.
Category 2.

CH 430 Advanced Inorganic Chemistry
Prerequisite: CH 301 or consent of instructor

An in-depth presentation of topics such as wave mechanics, atomic structure, chemical bonding, spectroscopy, coordination chemistry, crystal field theory, and stereochemistry.
Category 2.

CH 450 Special Topics in Physical Chemistry
Prerequisites: CH 301, CH 302

Exploration of frontier areas of physical chemistry including chemical kinetics, quantum chemistry, molecular spectroscopy, and symmetry properties of molecules.
Category 3.

CH/BI 453 Radiopharmaceuticals
Prerequisite: Consent of NMT coordinator

Fundamental concepts of radiopharmaceutical production including basic radiochemistry.
Category 1. 4 credits.

CH/BI 457 Clinical Nuclear Medicine Technology I
Prerequisite: Consent of NMT coordinator

Why a specific test is indicated; which radiopharmaceutical is preferred; and how the basic image appearance and/or numerical data may be altered by pathological states.
Category 1. 4 credits.

CH/BI 458 Clinical Nuclear Medicine Technology II
Prerequisite: Consent of NMT coordinator

Case presentations using formulas, charts, tables, and calculations to arrive at examination parameters such as amount of dose, number of counts, speed of instrument, etc.
Category 1. 4 credits.

CH 460 Natural Products
Prerequisites: CH 201, CH 202

An advanced organic chemistry course concerning the structure, synthesis, and biological significance of compounds such as alkaloids, terpenes, steroids, and antibiotics.
Category 2.

CH 470 Instrumental Analysis
Prerequisites: CH 120, CH 121, together with CH 210 or CH 301 or two years of analytical laboratory experience

Advanced level survey of instrumental methods of separation and analysis including spectrophotometry, potentiometry, polarography, and chromatography. Laboratories are project-oriented. Two hours of lecture and six hours of laboratory per week.
Category 2. 4 credits.

CH 480 Chemistry Internship
Prerequisite: Consent of discipline

Project completed at an institution other than WSC by a student with a non-WSC sponsor and WSC liaison.
Category 1. 1-6 credits.

CH 490 Independent Study in Chemistry
Prerequisite: Consent of department

Advanced independent work on a research problem in chemistry mutually agreed to by the student and the instructor.
Category 1. 1-3 credits.

Graduate Courses

CH 941 Biochemistry of Nucleic Acids
Prerequisite: Biochemistry I, Modern Biochemistry, or Biological Chemistry

The structure and function of DNA and RNA. Topics include bacterial, viral, and eukaryotic nucleic acids.

CH 942 Structure and Function of Proteins
Prerequisite: Biochemistry I, Modern Biochemistry, or Biological Chemistry.

The biochemistry of proteins. Particular emphasis is given to enzymes and the kinetics of enzyme-catalyzed reactions.

CH 943 Laboratory Techniques in Biochemistry
Prerequisite: Biochemistry I, Modern Biochemistry, or Biological Chemistry

This course includes the isolation and characterization of biochemical compounds with emphasis on nucleic acids and proteins, including enzymes.

CH 990 Special Problems in Chemistry.
Prerequisite: Consent of department

A laboratory or library research project conducted in consultation with a faculty member.

CH 991 Directed Study
Prerequisite: Consent of department

Designed for the student who wishes to undertake an individualized study in chemistry on a topic mutually agreeable to student and instructor.
1-4 credits.

CH 996 Internship in Chemistry
Prerequisite: Consent of department

Research project completed at an institution other than WSC by a student with a non-WSC sponsor and WSC liaison. Requires final typewritten report.

Communication Disorders

Undergraduate Courses

CD 100 Introduction to Human Communication and its Disorders

Nature and causes of organic and functional speech, language and hearing problems, general awareness of diagnostic and therapeutic techniques.
Category 1.

CD 105 Phonetics

A study of the sounds of the American English language, their production, their representation by international phonetic symbols, and their graphic transcription.
Category 1.

CD 110 Anatomy and Physiology of Speech and Hearing

Normal anatomy and physiology of the speech and hearing mechanisms with emphasis on respiration, phonation, resonance, articulation, and audition.
Category 1.

CD 115 Normal Development of Speech and Language

An in-depth coverage of the normal acquisition and development of speech and language, including phonology, morphology, syntax, semantics and pragmatics.
Category 1.

CD 120 Introduction to Sign Language

Sign language systems and fingerspelling with emphasis on American Sign Language vocabulary and word order.
Category 1.

CD 125 Principles of Teaching the Handicapped

Special methods and techniques for teaching the handicapped who have speech and hearing impairments; e.g., cleft palate, hearing loss, cerebral palsy.
Category 3.

CD 200 Introduction to Speech and Hearing Science

Prerequisites: CD 100, CD 105, CD 110, CD 115

Basic information to understand concepts in speech/audiology; physical concepts, acoustics, psychoacoustics, measurement of sound, speech production/perception theories.
Category 1.

CD 205 Audiology

Prerequisite: CD 200

Introduction to audiometric testing techniques and interpretation as related to ear pathologies.
Category 1.

CD 210 Language Disorders

Prerequisites: CD 100, CD 105, CD 110, CD 115, CD 200, CD 205

Examination of the processes interfering with normal language acquisition and the disorders which disturb established language skills in children and adults.
Category 1.

CD 215 Voice and Articulation Disorders

Prerequisites: CD 100, CD 105, CD 110, CD 115

The etiology, evaluation, diagnosis, and therapeutic procedures for functional and organic voice and articulation disorders.
Category 3.

CD 225 Neurological Disorders of Speech

Prerequisites: CD 100, CD 105, CD 110, CD 115

Communication difficulties associated with cerebral insult; rehabilitative procedures in speech and language.
Category 3.

CD 300 Rehabilitation of the Auditorily Impaired

Prerequisites: CD 100, CD 105, CD 110, CD 200, CD 205

Theory of practices used to improve communication for the hearing impaired; visual/auditory perception of speech, amplification, behavior modification.
Category 1.

CD 305 Rhythm Problems and Allied Disorders of Speech

Prerequisites: CD 100, CD 105, CD 110

Introduction to major theories of stuttering and associated problems; e.g., cluttering; basic therapeutic procedures for children and adults.
Category 1.

CD 307 Intermediate Sign Language

Prerequisite: CD 120

Students gain more facility in sign usage. Receptive and expressive vocabularies are expanded and fluency increased.
Category 1.

CD 310 Speech/Language Practicum I

Prerequisites: CD 100, CD 105, CD 110, CD 115, CD 200, CD 205, CD 210, CD 215, CD 305 and consent of instructor

Observation and live practicum experience in evaluation, diagnosis, and treatment of speech/language disorders; majors only.
Category 1.

CD 315 Language Therapy for the Deaf and Hard of Hearing
Prerequisites: CD 100, CD 205

Receptive and expressive language acquisition, appraisal and remediation of the hearing impaired.
Category 3.

CD 320 Clinical Audiology Practicum
Prerequisites: CD 205, majors only, consent of instructor

Review of audiometric techniques and practicum experiences in basic hearing evaluation procedures. May be taken twice.
Category 1.

CD 400 Speech/Language Practicum II
Prerequisites: CD 310, consent of instructor

Continuation of CD 310; continued experiences in diagnostic procedures and appropriate therapies with speech/language disorders, majors only.
Category 1.

CD 405 Aural Rehabilitation Practicum
Prerequisites: CD 300, and consent of instructor

Basic experience in management of clients with hearing loss; clinical practicum provided.
Category 1.

CD 410 Tests and Measurements in Speech Correction
Prerequisite: CD 100

Review of diagnostic tests and procedures used in the diagnosis of speech, language, and hearing disorders.
Category 2.

CD 475 Selected Topics in Communication Disorders
Prerequisites: CD 100, CD 115, and permission of instructor

Selection of topics of mutual interest to the student and faculty. Timely topics and issues will be covered.
Category 3.

CD 490 Independent Study in Communication Disorders
Prerequisite: Junior and senior majors only, with consent of instructor

The student will pursue an area of special interest in speech pathology or audiology through research or field experience, under faculty supervision.
Category 1. 1-3 credits.

Graduate Courses

CD 910 Speech/Language Development, Differences and Disorders
Students gain an in-depth understanding of speech/language development, knowledge of cultural differences and the disorders of speech/language.

CD 915 Microcomputers in Language Assessment, Development, and Enhancement
Prerequisites: CD 100 and CD 115, or consent of department

Students will learn about current and potential uses of microcomputers and microprocessor technology with language-impaired children and adults.

CD 920 Articulation Disorders
Prerequisites: CD 100, CD 105, CD 110, CD 115

Review of the anatomy/physiology of the articulatory mechanism. Study of the etiology, diagnosis and treatment of functional and organic factors.

CD 921 Language Disorders in Children
Prerequisite: CD 115

Discussion of processes interfering with normal language acquisition and the disorders which disturb established language skills in children.

CD 922 Language Disorders in Adults
Prerequisites: CD 100, CD 105, CD 110, CD 115, CD 205

Discussion of processes and disorders which interfere with and interrupt established language skills in adults. Theories of testing and treatment.

CD 923 Rate and Rhythm Disorders
Prerequisites: CD 100, CD 110, CD 115

An in-depth study of the etiological theories and behaviors of rhythm disorders in children and adults.

CD 924 Voice Disorders
Prerequisites: CD 100, CD 110

Discussion of vocal mechanism anatomy, physiology, and pathology. Detailed study of etiology, diagnosis, and treatment of functional and organic voice disorders.

CD 927 Clinical Audiology
Prerequisites: CD 110, CD 200, CD 205

Tests and techniques for the measurement of auditory processes. Interpretation of the test results and implications for remediation.

CD 928 Aural Rehabilitation Theory
Prerequisite: CD 927

The theory and practice of evaluation and management of the hearing impaired.

CD 930 Cleft Palate
Prerequisites: CD 100, CD 105, CD 110, CD 115, CD 215

Study of development of maxillofacial anomalies, classification of clefts, surgical repair, associated defects, related speech and language disorders, and treatment.

CD 933 Cerebral Palsy
Prerequisites: CD 100, CD 105, CD 110, CD 115, CD 205

Etiology, diagnosis, and habilitation of speech and language problems associated with cerebral palsy. In-depth study of neurophysiological approach.

CD 940 Diagnostic Evaluation: Methods and Procedures
Prerequisites: CD 205, CD 920, CD 921 or CD 922

Intensive study of communication evaluation techniques. Includes test selection, administration, interpretation followed by report writing, and remedial planning.

CD 943 Speech and Voice Science
Prerequisite: CD 200

An in-depth study of speech as a science, including in-depth acoustics, psychoacoustics, anatomy and physiology as they relate to the production, transmission, and perception of speech. Introduces such laboratory instruments as the spectrograph, delayed auditory feedback, manometer, and sound level meter.

CD 945 Auditory Processing Disorders and Techniques of Remediation in the Classroom

A course designed for school personnel. Includes types of auditory problems, associated symptoms, diagnostic report interpretation, and habilitative teaching techniques.

CD 947 The Speech-Handicapped Child in the School

An investigation of communication problems prevalent in school age children. Relationship between language and learning. Suggestions for remedial techniques.

CD 948 Current Events in Communication Disorders

Prerequisite: CD major or professional in the field

Review current events in communication disorders by reading and evaluating current print and non-print materials dealing with communication disorders.

CD 970 Independent Study in Communication Disorders

Prerequisites: Major in communication disorders and consent of instructor

Students may elect to take an independent study in course content, practicum experience, or independent research.
1-3 credits.

CD 980 Research in Communication Disorders

Prerequisites; CD 100, CD 105, CD 110, CD 115, CD 200, CD 205 MA 900; matriculated graduate students or consent of instructor

Review and critical analysis of research in the field of communication disorders. Students will write an original research proposal.

CD 985 Seminar in Speech Pathology

Prerequisites: Completion of a minimum of 18 graduate credits in speech pathology and audiology and consent of instructor

Study and discussion of current research techniques and professional trends in the field of speech/language pathology. Semester topics will vary.

CD 990 Clinical Practicum in Speech Pathology

Prerequisites: CD 205, CD 920, CD 921 or CD 922, CD 928; majors with consent of instructor

Experience in the diagnosis and treatment of speech and language disorders in a variety of clinical settings. Speech pathology majors register for three credits the first semester, one to three credits thereafter until 300 practicum hours are completed.

CD 993 Clinical Practicum in Audiology

Prerequisites: CD 927; majors only with consent of instructor

Supervised clinical experience in the evaluation of the hearing impaired.

CD 997 Thesis Research in Communication Disorders

Prerequisite: CD 980

Original research in Communication Disorders under the supervision of a member of the faculty, and an acceptable thesis. Three credits per semester for two semesters.

Computer Science

Undergraduate Courses

CS 101 Computers in Society

Topics include survey of data processing, history, software, hardware, types of programming languages, introduction to management information systems, and introduction to the BASIC programming language.
Category 1.

CS 111 Programming Languages I

Basic computer operations, functional characteristics, applications in various fields and effects on modern society; familiarization with equipment and terminology; programming in an introductory language.
Category 1.

CS 120 Microcomputer Applications in Business I

Learning state-of-the-art application packages including but not limited to word processing, file and database management systems and spreadsheets.
Category 2.

CS 210 Data Communications Systems

Prerequisite: CS 111 or CS 250

Topics include transmission in computer systems, bandwidth, transmission rates, multiplexing, and common-carrier services.
Category 2.

CS 212 Programming Languages II

Prerequisite: CS 111

Advanced topics in an introductory language including string functions, sequential and random access files, sorting and chaining. Programs will be written which relate to general applications.
Category 1.

CS 221 Microcomputer Applications in Business II

Prerequisite: CS 120

Advanced features of application packages including but not limited to spreadsheets, file and database management systems, word processing, graphics and integration.
Category 2.

CS 230 PASCAL Language Programming
Prerequisite: CS 111

Using PASCAL to solve various business and scientific problems. Topics include input and output statements, control statements, arrays, subscripts, records, and sets.
Category 2.

CS 231 Business Programming I
Prerequisite: CS 111

The fundamentals of the COBOL programming language, the purpose of each division, section, paragraph, verb, etc., and how to write programs to solve business problems using sequential file processing techniques.
Category 1.

CS 232 Business Programming II
Prerequisite: CS 111

The fundamentals of the RPG programming language; the purposes and uses of the four basic RPG specification forms, and how to write programs to solve business problems using sequential file processing techniques.
Category 1.

CS 233 Information Retrieval and File Management
Prerequisite: CS 231

Advanced aspects of the COBOL programming language, table processing, sorting, indexed sequential and random access files, master file updating, and the report writer features of COBOL.
Category 1.

CS 234 Business Programming III
Prerequisite: CS 232

Advanced aspects of the RPG programming language; table and array processing. Indexed sequential and random access files, master file updating, and the use of the RPG file extension specifications form.
Category 1.

CS 250 Scientific Programming I
Prerequisite: CS 111

Mathematical and scientific problem solving using FORTRAN; real and integer arithmetic, input and output, DO-loops, basic FORMAT, subscripted variables, subroutines, double precision, and character manipulation.
Category 1.

CS 251 Scientific Programming II
Prerequisite: CS 250

Advanced programming techniques in FORTRAN; file manipulation, modular application techniques, COMMON and EQUIVALENCE statements and their interaction, multiple entries and adjustable dimensions.
Category 2.

CS 260 Management Data Processing
Prerequisite: CS 111

Management of the data processing function. Security, accuracy, control over hardware, software, and personnel. Evaluation procedures for hardware and software.
Category 2.

CS 275 Fundamentals of Business Systems
Prerequisite: CS 231

Introduction to the process of systems analysis and the design considerations of functioning business systems.
Category 2.

CS 280 Discrete Simulation and Modeling Techniques
Prerequisites: CS 212, MA 250

Introduction of a range of analytical and simulation modeling techniques covering queuing, inventory, allocation and scheduling situations. Application of discrete simulation of problems using GPSS and SPSS.
Category 2.

CS 310 Computer Organization and Assembly Language Programming
Prerequisite: CS 230

Topics include assembly language programming, and the study of a large third or fourth generation computer (such as an IBM 370), memory addressing, variable and fixed length words, register use, and other non-privileged instructions.
Category 2.

CS 315 Digital Logic Circuits
Prerequisites: MA 321, PY 261

Topics include application of Boolean algebra to an analysis of combinatorial and sequential switching circuits. Characteristics of logic elements, memory devices, and logic circuits to accomplish code conversion.
Category 3.

CS 320 Micro, Mini Computers
Prerequisite: CS 231 or CS 250

Topics include architecture of the new popular small computers, limits, languages, and specialized hardware.
Category 3.

CS 325 Programming Language Concepts
Prerequisites: CS 230 or CS 231, CS 250

Topics include comparison of syntax and semantic descriptions, data types and control, operations and sequencing, ease of use, applicability, generality, non-procedurality, and efficiency.
Category 3.

CS 330 Advanced PASCAL
Prerequisite: CS 230

Advanced topics in PASCAL including files, data structures, recursion, sorting, and searching.
Category 2.

CS 350 Computer Architecture and Operating Systems
Prerequisite: CS 230 or CS 250

Hardware and software as an integrated system; development of system software for process management, resource allocation, memory management and I/O processing.
Category 3.

CS 361 Data Structures
Prerequisite: CS 230

Advanced techniques for program constructions and testing are emphasized. Topics include linked lists, trees, sorting, searching, string manipulation, and dynamic storage allocation.
Category 2.

CS 370 Compiler Design
Prerequisites: MA 321, CS 361

Methods of compiling a high-level language into assembly language; a simple compiler to translate a modified BASIC into an assembly language such as MIX will be designed and tested.
Category 2.

CS 375 Business Systems Analysis and Design
Prerequisite: CS 231

All aspects of the analysis, design, and implementation of an application-oriented system (i.e., general ledger system, inventory control system, payroll system, or production control systems).
Category 3.

CS 380 Systems Programming
Prerequisites: CS 310, CS 320 or CS 350

A study of how operating systems interact with user programs, I/O programming, job and task management, interrupt, access modes ISAM and SAM files, hands-on programming.
Category 3.

CS 400 Database Design
Prerequisite: CS 361

The history and requirements of database development and maintenance; includes comparisons of commercially available models.
Category 3.

CS 410 Digital Computer Organization
Prerequisite: CS 315

A study of the internal structure of a typical digital computer from both a logical and a hardware viewpoint, memory devices, arithmetic, and control circuits including LSI and MSI components.
Category 3.

CS 430 Analysis of Algorithms
Prerequisite: CS 361

Teaching proven algorithmic techniques for solving problems and for determining the relative efficiency of different methods.
Category 3.

CS 440 Computability and Finite Automata
Prerequisites: CS 430, MA 321

Theory of computation, automata theory, recursive function theory, and formal grammars. Applications of finite automata theory to various areas of computer science will be considered.
Category 3.

CS 450 Management and Information Systems
Prerequisite: CS 233

Use of computers in constructing an MIS system. Definition, design criteria, implementation considerations, and administration of the system.
Category 2.

CS 460 Artificial Intelligence
Prerequisite: CS 361

Introduction to central issues of constructing intelligence systems. Examines historical and future trends of AI research.
Category 3.

CS 497 Selected Topics in Computer Science
Prerequisite: CS 230 or CS 250

Selection of topics of mutual interest to student and faculty.
Category 3. 1-6 credits.

CS 498 Internship
Prerequisite: Consent of department

Working in and for an organization where skills can be tested in real situations in order to gain experience, increase knowledge in various functional areas, and establish important contacts with an organization.
Category 1.

CS 499 Independent Study

Prerequisite: Consent of instructor

An opportunity for advanced students to examine topics not normally taught in other mathematics or computer courses. Geared to interests of both the student and the instructor.
Category 1. 1-6 credits.

Graduate Courses

CS 908 Data File Structures

Prerequisite: FORTRAN or PASCAL

The concepts and usages of various file structures including sequential, index-sequential, random, tree and plex structures, the design, implementation and management of data base systems.

CS 920 Advanced FORTRAN

Prerequisite: CS 902

Higher level aspects of FORTRAN are considered; including advanced programming techniques, common block storage, advanced FORMAT, sequential files, and file manipulation.

CS 926 Assembly Language Programming: Microcomputers

Computer structures and system organization for microcomputers; machine and assembly instruction codes; addressing modes and techniques as related to microcomputers, numerical and non-numerical projects.

CS 927 Advanced COBOL

Prerequisite: CS 904

Problems and principles in the automatic handling of large information files utilizing a variety of input-output and storage devices.

CS 928 Assembly Language Programming: Macrocomputers

Mainframe assembly language (for example, IBM 370 or 4041) to include architecture, instruction, addressing techniques, and digital representation of data; structure of assemblers, program segmentation and linkage; and macrofacilities; numerical and non-numerical projects.

CS 929 Higher Level Programming in PASCAL

The language PASCAL will be studied using examples and problems. PASCAL utilizes the natural structure of algorithms and data to increase readability. PASCAL programs, loops, iterative procedures, data structures, etc. will be examined.

CS 930 Applied Information Systems

Basic systems analysis skills and programming in a business language. Designing and programming specific business systems on case studies.

CS 931 Higher Level Programming In APL

Prerequisite: Any computer language course

APL will be studied via examples and problems. Data structures, arithmetic functions, relation functions, vectors, etc., will be examined in detail. APL is a structural language.

CS 990 Seminar in Computer Science

Prerequisite: Minimum of 18 credits in computer science courses

Topics in computer science.

Economics

Undergraduate Courses

EC 100 Introduction to Macroeconomics

An introduction to economic analysis with particular emphasis upon the national problems of achieving and maintaining full employment, general price stability, and growth of the American economy through time.
Category 1.

EC 101 Introduction to Microeconomics

An introduction to the operation of the American market system and to the behavior of its participants whether consumers, producers, the government, or other nations engaged in international trade with the United States.
Category 1.

EC 102 Consumer Economics

An in-depth study of personal and family economics, obtaining income, buying wisely, consumer borrowing, saving, and financial investment; the consumer protection and consumer legislation movements will be specifically emphasized.
Category 1.

EC 200 Macroeconomics

Prerequisite: EC 100

An intermediate analysis of the determination of the level and growth of national income and employment, special attention given to the problems of inflation and recession and to the national fiscal and monetary policies designed to maintain full employment and stable price levels.
Category 1.

EC 201 Microeconomics

Prerequisite: EC 101

An intermediate level treatment of the theory of market pricing in a private enterprise system as it affects the resource and output decision of firms and industries under various market structures and the behavior of consumers.
Category 1.

EC 202 Labor Economics

Prerequisite: EC 101

A study of the process of wage determination in a market economy, consideration given to the evolution of union organization and collective bargaining affecting wages, hours, working conditions, and grievance procedures for labor.
Category 2.

EC 203 Government Policy Toward Business

Prerequisite: EC 101

An analysis of the problems of competition and monopoly, especially as they affect concentration of economic activity and market power in the American industrial structure; emphasis is placed upon government policy to maintain or regulate competition in the public interest.
Category 2.

EC 204 Comparative Economic Systems

Prerequisites: EC 100 and EC 101

A comparative study of the theory, institutions, and problems of advanced economic systems and their historical background; particular attention given to capitalism and socialism.
Category 2.

EC 205 Monetary Economics

Prerequisite: EC 100

The historical and theoretical development of the American money system of commercial banks and financial intermediaries; emphasis on the role of monetary controls and policy as partial solutions to full employment, price stability, and economic growth problems.
Category 2.

EC 206 Urban Economics

Prerequisite: EC 100

The theory and policy of the growth and development of metropolitan areas; some of the policy-related problems discussed are poverty, residential and commercial land use, and traffic congestion.
Category 2.

EC 207 Statistics

Prerequisite: For majors only

Basic tools of statistical analysis appropriate to research in the social sciences; topics include measures of central tendency, hypothesis testing, time series, index numbers, regression and correlation.
Category 1.

EC 208 Economics of Health Care

Prerequisite: EC 101

Introductory study of the health care industry of the United States; pricing of health care, manpower availability, alternative delivery systems, third party payments, and government role in planning, regulating, and financing health care.
Category 3.

EC 210 Economics of Energy

Prerequisite: EC 101

Principles and methods of cost estimating and money management in production of heat and power; considers residential, commercial, and industrial applications.
Category 2.

EC 300 Industrial Revolutions

Prerequisites: EC 100 and EC 101

Historic cases of industrialization will be examined in terms of modern economic development and implications for presently underdeveloped economies.
Category 3.

EC 301 Economic Development

Prerequisites: EC 100, EC 101

A survey of contemporary economic theories concerning less developed countries; social, cultural, and political forces shaping the development of such countries are also investigated.
Category 2.

EC 302 Development Planning and Regional Economics

Prerequisites: EC 100, EC 101

A survey of the problems that must be dealt with by less-developed countries in planning their economic development. Theories of regional economics applicable to both developed and less developed economies.
Category 2.

EC 304 Economics of the Environment

Prerequisite: EC 101

Methods of pollution control and the socio-economic problems caused by pollution, current research on ecology and economics, and the impact that limits on pollution may have on income and population growth.
Category 3.

EC 305 Introduction to Mathematical Economics

Prerequisite: EC 101

A survey of some basic mathematical techniques appropriate to the analysis of economic models and application of economic theory.
Category 2.

EC 306 Introduction to Econometrics

Prerequisites: EC 101 and statistics

The application of statistical techniques to the verification of economic models and examination of economic problems.
Category 2.

EC 308 International Trade

Prerequisites: EC 100, EC 101

Reasons why nations gain by spatial specialization and exchange with other countries. Analysis of the mechanism by which international equilibrium is restored. Study of trade and foreign exchange policies.
Category 2.

EC 309 Public Spending and Taxation

Prerequisites: EC 100, EC 101

An analysis of government spending, revenue sharing, and taxation; includes the impact of government spending upon efficient use of resources and national growth.
Category 2.

EC 310 Post-War Stabilization Policies

Prerequisites: EC 100, EC 101

US stabilization policies since 1945. Of special concern will be the relative merits of monetarist and neo-Keynesian viewpoints about stabilization policy in light of the historical record.
Category 3.

EC 311 Economics of Human Resources

Prerequisite: EC 101

Economic impact of investment in education and labor emphasizing occupational needs, forecasting and planning, both in business and for the economy.
Category 2.

EC 400 Independent Study in Economics

Prerequisites: Consent of instructor, Juniors and Seniors

For the student whose needs cannot be fully met by available offerings; actual arrangements to be made between student and professor; not intended for general enrollment; a limit of three credits can be acquired.
Category 1. 1-3 credits.

EC 401 Seminar

Prerequisite: Consent of instructor

A research and discussion process intended to summarize and provide some career orientation to the undergradute preparation of the economics major at the senior class level.
Category 3.

EC 402 Internship in Economics

Prerequisites: Advanced standing in economics major, high achievement, and consent of staff coordinator

Practical experience in economic analysis with industry, non-profit organizations, and government agencies; internships may be of varying length.
Category 1. 1-12 credits.

Education

Undergraduate Courses

ED 100 Developmental Reading

Reading comprehension. Practice in reading and study skills for freshmen and new transfer students only.
Category 1.

ED 150 Teaching & Learning in Early Childhood & Elementary Education.

Exploration of the evolution of childhood education through observation and participation focusing on the dynamics that create effective learning environments. Field experience.
Category 1.

ED 210 Creative and Motor Experiences for Young Children

Prerequisite: ED 150

Provides knowledge and developmentally appropriate activities for fine and gross motor skills, art, music, movement, drama. Field experience.
Category 1.

ED 211 Curriculum and Evaluation in Early Childhood Education

Prerequisites: ED 150, PS 210

Course treats designing and evaluating multidisciplinary curricula, evaluation of children's development and learning, environments, regulations, learning theories. Field experience.
Category 1.

ED 212 Human Interrelationships in Early Childhood Education

Prerequisites: ED 150, PS 210

Treats interpersonal and group skills in pluralistic society, multicultural issues, interrelationships, special needs, mainstreaming. Field experience.
Category 1.

ED 250 Educational Psychology

Prerequisite: ED 150, PS 110

Learning and developmental processes, motivation, retention, relationships of intelligence and achievement, creativity, personality, affective aspects of learning.
Category 1.

ED 253 History and Philosophy of Education
Prerequisite: Consent of instructor

Contemporary problems of education in relation to selected ancient, medieval, and modern philosophers of education.
Category 1.

ED 255 Learning Skills for Adolescents

Teaching reading, study, and communication skills appropriate to developmental stages, special needs, social, racial and linguistic background of students. Includes field experience.
Category 1.

ED 257 Teaching Exceptional Adolescents

Teaching and curriculum modifications for learning disabled, handicapped, unmotivated, undisciplined, and gifted high school students from diverse backgrounds.
Category 1.

ED 260 Using Computers in Early Childhood/Elementary Education

Course treats LOGO, LOGO WRITER, identification/evaluation of ECE/Elementary educational software, educational computer issues, word processing for children, curriculum integration.
Category 1.

ED 266 Foundations of Curriculum and Instruction.

Investigation of curriculum materials which meet the special needs and interests of secondary school students. Includes field experience.
Category 1.

ED 275 Curriculum & Instruction in Elementary Education
Prerequisites: PS 210, ED 150, ED 250

Analysis of interactions in effective elementary schools through participation in and exploration of curriculum, teaching and learning roles. Field experience.
Category 1.

ED 285 Introduction to Children with Special Needs
Prerequisite: PS 210

Special needs (learning disabilities); designed to orient prospective teachers with the problems of children with special needs.
Category 3.

ED 286 Identification of the Preschool Child with Special Needs
Prerequisite: PS 210

The development of skills applicable to the process of identifying children with special needs.
Category 3.

ED 302 Educational Measurement and Evaluation
Prerequisite: Consent of instructor

Study, construction, and evaluation of instruments in education; interpretation of data; criteria for selection and evaluation of behavioral objectives and standardized tests.
Category 1.

ED 303 Urban Education
Prerequisite: Consent of instructor

Development of understanding of the social, psychological, and educational problems of the culturally different; strategies and techniques for teaching in the inner-city practicum.
Category 3.

ED 308 Early Childhood Education - Mathematics
Prerequisites: ED 150, ED 210, ED 211, ED 212, PS 210, CD 115, ME 110

Application of Piaget's ideas to early mathematical education. Other well-known psychologists' views concerning early mathematics instruction, with application. Field experience.
Category 1. 2 credits.

ED 309 Early Childhood Education - Science
Prerequisites: ED 150, ED 210, ED 211, ED 212, PS 210, CD 115, ME 110

Overview of scientific concepts and processes of exploration for preschool to third grade settings. Curricula, materials, and activities will be explored. Field experience.
Category 1. 2 credits.

ED 310 Early Childhood Education - Social Studies
Prerequisites: ED 150, ED 210, ED 211, ED 212, PS 210, CD 115, ME 110

Exploration of the goals, content, curriculum patterns, cognitive and social skills, affective domain involved in pluralistic early childhood social education. Field experience.
Category 1. 2 credits.

ED 311 Field Experience in Early Childhood Education
Prerequisites: ED 150, ED 210, ED 211, ED 212, PS 210, CD 115, ME 110, ED 308, ED 309, ED 310 (308, 309, 310 may be taken concurrently)

An introductory teaching experience in licensed group day care center/public preschool for a minimum of 12 hours per week for the entire semester. Students will utilize content, information, methods and materials studied in ED 308, ED 309 and ED 310.
Category 1.

ED 312 Evaluating Children's Progress
Prerequisite: ED 210

Understanding and interpretation of the results of psychological and educational tests of children of preschool age; seminar and discussions of children in a variety of child-care settings.
Category 2.

ED 316 Organization and Supervision of Programs in Early Childhood Education
Prerequisites: ED 308, ED 309, ED 310, ED 318

Organizational and supervisory strategies used in programs in early childhood education.
Category 3.

ED 318 Early Childhood Education - Reading and Language Arts
Prerequisites: ED 150, ED 210, ED 211, ED 212, CD 115

Study of reading and language skills, children's literature, curriculum, materials, and approaches to reading and language development. Field experience.
Category 1.

ED 319 Advanced Field Experience in Early Childhood Education
Prerequisite: ED 311

Multidisciplinary teaching experience in licenced group day care center/public school/kindergarten. Emphasis on reflection, analysis, integration of curriculum. Seminar.
Category 1.

ED 333 Teaching Elementary Mathematics
Prerequisites: ED 150, ED 250, ED 275, PS 210; taken concurrently with ED 334 and ED 335

Techniques for teaching arithmetic in elementary school. Emphasizes underlying theory, content, material development, evaluation of materials/techniques. Field experience.
Category 1. 2 credits.

ED 334 Teaching Elementary Science
Prerequisites: ED 150, ED 250, ED 275, PS 210; taken concurrently with ED 333 and ED 335

Overview of scientific concepts, processes of exploration for first through sixth grade. Curriculum, materials, activities are explored. Field experience.
Category 1. 2 credits.

ED 335 Teaching Elementary Social Studies
Prerequisites: ED 150, ED 250, ED 275, PS 210; taken concurrently with ED 333 and ED 334

Goals, content, curriculum, cognitive and social skills, issues, methods and materials involved in pluralistic elementary social studies programs. Field experience.
Category 1. 2 credits.

ED 336 Teaching Elementary Reading and Language Arts

Prerequisites: ED 150, ED 250, ED 275, PS 210

Study of reading and language arts skills and analysis of curriculum, materials and systems for effective instruction and student learning. Field experience.
Category 1.

ED 348 Children's Literature

Prerequisites: ED 150, ED 250, ED 275

Various genre of literature for elementary pupils explored, criteria for appropriate selections, techniques of preparation, use in classrooms.
Category 3.

ED 350 Evaluating Classroom Learning

Prerequisite: Completion of required 200 level pre-practicum secondary courses

Evaluating instruction, student readiness and achievement, using measures appropriate to secondary schools. Students will utilize self-evaluation techniques and processes.
Category 1.

ED 357 Curriculum, Methods, and Media in Teaching Mathematics

Prerequisite: Completion of the required 200 level pre-practicum courses

Techniques in the teaching of mathematics using a variety of instructional designs and strategies. Includes field experience.
Category 1.

ED 361 Curriculum, Methods and Media in Teaching Social Studies

Prerequisite: Completion of the required 200 level pre-practicum courses

Techniques in the teaching of social studies using a variety of instructional designs and strategies. Includes field experience.
Category 1.

ED 362 Curriculum, Methods and Media in Teaching English

Prerequisites: ME 135 and completion of the required 200 level pre-practicum courses

Techniques in the teaching of English using a variety of instructional designs and strategies. Includes field experience.
Category 1.

ED 366 Curriculum, Methods and Media in Teaching Mathematics & Science

Prerequisite: Completion of required 200 level practicum courses

Techniques in the teaching of mathematics and science using a variety of instructional designs and strategies. Includes field experience.
Category 1.

ED 367 Curriculum, Methods and Media in Teaching Humanities and Behavioral Sciences

Prerequisite: Completion of required 200 level pre-practicum courses

Techniques in the teaching of humanities and behavioral sciences using a variety of instructional designs and strategies. Includes field experience.
Category 1.

ED 372 Using Computers in the Secondary Classroom

Review and evaluate secondary courseware and develop courseware. Includes overview of LOGO, LOGO WRITER, word processing, classroom management software, curriculum integration and educational computer issues.
Category 3.

ED 395 The Educator and Cultural Diversity

Prerequisite: Completion of freshman year

To enable the educator to better understand the roots and contributions of diverse cultures in America.
Category 3.

ED 410 Special Topics
Prerequisite: Completion of freshman year

A seminar course on current issues or topics in education.

ED 430 Student Teaching in Early Childhood Education
Prerequisite: Completion of all required education courses

Full semester teaching experience in a kindergarten and in first through third grades, involving planning, implementing and evaluating learning experiences.
Category 1. 6-9 credits.

ED 435 Student Teaching in the Elementary School (Grades 1-6)
Prerequisite: Completion of required education courses

Actual teaching in a local school; principles, techniques, and responsibility of planning, executing, and evaluating teaching and learning.
Category 1. 6-9 credits.

ED 450 Independent Study in Education
Prerequisite: Completion of freshman year

For the student who wishes to pursue independent study in education; faculty members from other disciplines may be called upon to counsel student.
Category 1. 1-3 credits.

ED 475 Practicum in Teaching
Prerequisite: Completion of required education courses including the appropriate course in methods and media

For the secondary education student; practice in teaching in the secondary school.
Category 1. 6-9 credits.

Graduate Courses

EA 900 Programs for the Aging
Examines issues, problems, and procedures in designing and implementing programs for older adults.

EA 901 Teaching the Illiterate Adult
An understanding of the scope of adult illiteracy and the methods and procedures for teaching adult illiterates to read.

EA 902 Designing, Developing, and Delivering Training Programs
Emphasis on design, implementation and evaluation of training programs in the private and public sectors. For students with experience in Human Resource Training.

EA 903 Materials and Methods in Adult Education
Focus on specific topics in adult education; e.g., ESL, literacy, reading, the GED.

EA 904 Directed Study in Adult Education
Prerequisites: Course in adult education and consent of the Director of Adult Education

Intended for graduate students who have a background in the field and who have the opportunity to analyze a special problem or explore personal interest in adult education.
6 credits.

EA 905 Foundations of Adult Education
Overview of the scope of adult education, its historical and philosophical foundations as a change agent, current issues, and future developments.

EA 906 Psychology of the Adult Learner
Explores methods of learning which apply to adults. Identifies educational needs and problems of the adult learner in overcoming learning difficulties.

EA 907 Program Planning for Adults

Examines the process of selecting components for adult programs and setting up the administrative structure to deal with them.

EA 908 Administration in Adult Education

Explores effective strategies for achieving adequate funding, staff, facilities and equipment.

EA 909 Internship in Adult Education

Prerequisite: Completion of courses related to practicum and consent of the Director of Adult Education.

Participants will have the opportunity to work in an adult education program to obtain guided practical experience.

EA 910 Reading Needs of the Adult Learner

Procedures and techniques for teaching reading to undereducated adults, includes beginning reading, comprehension, prescription, and evaluation.

EA 911 Teaching ESL to Adults

Teaching non-English speaking adults. Relevant concepts in learning theory and linguistics, teaching techniques, and the necessary skills.

EA 920 School Business Management and Administration

Studies the interaction between school management services and the total educational organization and its environment.

EA 921 Fundamentals of School Finance

Considers the financial support and the allocation of resources in public education.

EA 922 Public School Administration

A historical, philosophical, and sociological study of American school administration with a major emphasis on the function, duties, and responsibilities of the school administrator.

EA 923 Law for the Administrator

An in-depth investigation of specific school laws and how they relate to the administration of a modern school system.

EA 924 Curriculum Development Seminar for Administrators

A seminar course in curriculum theory, constructs, and hypotheses.

EA 925 Staff Development: Theory and Practice

Theories and methods of staff development and inservice education for program aims and personnel. Action research in individual areas of involvement.

EA 926 School Superintendency

Studies the typical problems associated with the school superintendency.

EA 927 School Plant and Development

A practical investigation of the planning, developing and implementing of renovations, or construction of new facilities. Topics include evaluating public relations and the community, hiring an architect, warrants and bonds, building and developing facilities.

EA 928 Practicum in Educational Administration/Leadership

A 300-clock-hour practicum in an area of educational administration.
6 credits.

EA 929 Special Problems in School Administration

A field-based experience designed around a special problem in administration of a school system.

EA 930 Internship in Education Administration

A 150-clock-hour internship in an area of educational administration.

EA 931 Administration of Programs for Children with Special Needs

The implications of legislation for administrators who are responsible for implementing these programs.

EA 932 Educational Personnel Administration

Study of the policies and problems associated with the selection, assignment, orientation, in-service programs, evaluations, promotion, and retention of the professional and nonprofessional staff of a school system.

EA 933 Collective Bargaining Strategies

A survey of the basic designs, strategies, and mechanisms used in preparing collective bargaining packages, counter proposals, and final proposals.

EA 939 Action Research Project I
EA 940 Action Research Project II

A two-semester course during which students will enroll for two consecutive semesters. During the two semesters students will meet both in large groups and individually in developing their action research projects.

ED 900 Introduction to Computers in Education

Introduction to the uses of computers in education. Includes overview of microcomputer operation, LOGO, word processing, file management, and courseware evaluation.

ED 901 Current Issues in Computers in Education

Prerequisite: ED 900

Treats the impact of computers on learning and teaching. Social and political issues related to computers are studied through readings, class discussion, lab, and field work.

ED 902 Integrating Computers in the Mathematics Curriculum

Prerequisite: ED 900

Use of microcomputers in mathematics classes. Focuses on program writing, use and evaluation of commercial software and strategies for introducing computers into the math curriculum.

ED 903 Integrating Computers in the Language Arts/Reading Curriculum

Prerequisite: ED 900

Overview of existing software in language arts, reading, and writing. Integrating computers into existing language arts/reading curriculum and modifying curriculum to maximize use of computers in language arts/reading.

ED 904 Computer Tools for Classroom Teachers, Administrators and Librarians

Using existing database systems to create and maintain student files. Through the use of integrated software, generate reports, graphics and word processing applications. The use of spreadsheet techniques for budget planning and related activities.

ED 905 Identification and Evaluation of Education Software

Prerequisite: ED 900

Locating and evaluating educational courseware such as simulations, microworlds, video and tools for problem solving. Various evaluative instruments will be considered.

ED 906 Field Study in Computers in Education

Prerequisite: Consent of instructor

Field work in a setting where computers are being used in education with supervision and advisement.

ED 907 Curriculum Development Using Computer Technology

Prerequisite: ED 905

Using computer technology to supplement and enhance existing curriculum. Focusing on practical experience in curriculum planning and implementation.

ED 908 Directed Study in Computer Education

Permission required

Students work independently on a special computer-related concern under supervision of a faculty member.

ED 911 Foundations of Reading

Prerequisite: A previous course in reading or consent of instructor

Reading growth examined in terms of learning modalities, current research, and effective practice.

ED 912 Psychology in Teaching Reading

Provides an understanding of the psychological bases of the reading process; applies the theories of the psychologist to classroom situations.

ED 913 Diagnosis of Reading Disabilities

Student identifies and assesses reading disabilities through the administration of reading tests. Field-based experience included.

ED 914 Teaching Reading in the Content Areas

Presents meaningful theory and related teaching strategies to aid pupils in reading and learning from their content-area textbooks.

ED 915 Seminar in the Administration and Supervision of Reading Programs

Examines and evaluates programs with attention to current theories, developmental, and remedial aspects, staff development and laws pertaining to special needs.

ED 916 Literature in the Classroom

Introduces a balanced selection of literature and broadens the student's acquaintance with the exciting world of books from kindergarten through high school.

ED 917 Remediation of Reading Disabilities

Materials and strategies for remediation. Student prepares and implements corrective programs of instruction. Field-based experience included.

ED 918 Linguistics and Language Acquisitions for the Reading Teacher

Presents the history of the English language, phonology, morphology, syntax, semantics, and language variations, nonverbal communication, language acquisition in relation to elementary reading.

ED 919 Laboratory Practicum in Reading

Candidate plans and executes a total remedial reading program in supervised field-based experiences of 150 clock hours.
6 credits.

ED 921 Developmental Patterns of Children with Special Needs

Basic understanding of the child with special needs, including the characteristic psychological, educational and sociological impact of developmental deviations.

ED 922 Analysis and Interpretation of Children's Behavior and Learning Environment

Evaluation procedures used to assess academic, cognitive, affective, and behavioral functioning of the child. Formal and informal techniques for evaluating the effectiveness of instruction will be examined.

ED 923 Development and Implementation of an Individualized Educational Plan

Considers federal and state laws regulating the development and implementation of individualized educational plans.

ED 924 Program Development and Evaluation

Examination of current and proposed organizational plans for the delivery of services; application of research findings to curriculum effectiveness; program evaluation in terms of meeting the individual needs within the total school structure.

ED 925 Consulting and Interpersonal Skills

Focuses on the theories and techniques of consultation.

ED 926 Curriculum Development and Instructional Techniques

Principles of curriculum development and the use of instructional techniques for special needs students. Some field work.

ED 927 Classroom Management Techniques

Discussion of the basic principles and procedures for behavior management and modification and their implementation in a school setting; includes treatment design as related to IEP development.

ED 928 Practicum for the Moderate Special Needs Teacher

A field-based experience in which the student demonstrates competencies in the delivery of direct services: assessment procedures, educational planning, classroom management, curriculum development, and in-service education.
6 credits.

ED 929 Group Psychological Testing

Principles of psychological testing will be presented with emphasis placed on the role of the counselor and school psychologist in the selection and interpretation of individual and group psychological tests. Required for all students matriculated in the counselor training program.

ED 930 Theories of Counseling

Fundamental techniques and theories of counseling. Students will examine various theories of counseling and through the use of role-playing develop basic techniques in counseling.

ED 931 Psychological Counseling Strategies

Developmental and Gestalt insight approaches, as well as behavioral approaches to counseling, will be analyzed for their effectiveness with a variety of psychological problems.

ED 932 Counseling the Alcoholic and Drug Abuser

A study of alcohol and other drug abuse (physiological and psychological). Various treatment modalities will be examined.

ED 933 Vocational Counseling Strategies

Techniques involved in developing self-awareness, values, psychological needs and drives as well as the influence of the environment in earlier development.

ED 934 Counseling Students with Special Needs

The special-need students. The role of a counselor and the role of Chapter 766. Facilities available to special needs students outside the school setting.

ED 935 Vocational Development and Occupational Information

The ways in which individuals make decisions concerning their choice of vocations; types of information and data which are needed to aid people with these decisions.

ED 936 Counseling the Adolescent

Prerequisite: Baccalaureate Degree

Designed for students preparing to counsel adolescents. Focuses on adolescent patterns of development and the behaviors associated with them. Typical adolescent crises will be explored with specific strategies to deal with them.

ED 937 Group Counseling I

Theories, methodology, and content of group standardized test devices; case study procedures.

ED 938 Group Counseling II

Prerequisite: ED 937 or consent of instructor

Focuses on selected readings and provides an opportunity for students to develop their skills as facilitators or leaders by demonstration, practice, and group feedback.

ED 939 Individual Intelligence Appraisal (WAIS-WISC)

Prerequisite: Introductory course in measurement

Study of two major Wechsler tests, Wechsler Adult Intelligence Scale (WAIS), and the Wechsler Intelligence Scale for Chidren (WISC). Includes administration and interpretation of both of these scales.

ED 940 Individual Intelligence Appraisal (Binet)

Prerequisite: Introductory course in measurement

Study of the origin and use of the Stanford-Binet intelligence tests. Students will learn how to administer, score, and interpret the 1960 revision of the Binet.

ED 941 Counseling the Elementary School Child

Investigates the various age-related problems found in the elementary school age child of today. Various counseling strategies to deal with these problems will be explored.

ED 942 Family and Parent Counseling

An understanding of the family system theory. Students will develop skills and counseling strategies relating to family and parent counseling.

ED 943 Advanced Psychological Testing

Survey of tests and testing procedures, evaluating personality variables. Objective and projective measures of personality will be studied, stressing use in nonclinical settings.

ED 944 Organization and Administration of Guidance

Latest procedures, techniques, and problems in guidance programs. Analysis and discussion of unusual home-room, community group, and individual guidance problems will be stressed.

ED 945 Practicum in Counseling

Designed to give advanced graduate students an opportunity to put into practice the various theoretical aspects of academic counseling and guidance.
6 credits.

ED 946 Current Issues Seminar in Guidance and Counseling

Recent issues and developments in guidance and counseling will be explored.

ED 947 Seminar: Current Issues and Procedures in Career Counseling

Most recent theories and techniques for career counseling and development of career education courses and programs within school systems.

ED 948 Internship in Counseling

Prerequisite: Limited to advanced graduate students; consent of instructor required

Students will work in a counseling center under supervision and obtain experience in the day-to-day operations of a school or agency center. Actual counseling will be included.

ED 960 Educational Law

An in-depth investigation of specific school laws and how they relate the role of the teacher and administrator.

ED 961 Educational Supervision and Evaluation

Designed to develop competency in the supervision and evaluation of teachers.

ED 962 Intellectual Foundations of American Education

The foundations of American education, primarily in the twentieth century.

ED 963 The Understanding and Teaching of Culture

Approaches to cultural analysis and survey of techniques used to teach culture in the classroom.

ED 964 Current Issues in Education

Examination of the more important issues facing education. Emphasis will be placed on problem solving and case study approaches.

ED 965 Principles of Curriculum Development

Aspects of curriculum development, society, culture, learning theories, taxonomies of educational objectives, structure, hierarchy, balance, politics, strategy for change.

ED 966 Analysis of Curriculum Programs

Current curriculum programs in grades nursery-12; an analysis of objectives, descriptive characteristics, and theoretical foundations. Student-devised criteria used to assess curriculum programs.

ED 967 Theories of Instruction

Historical, philosophical, and psychological foundations of various theories of instruction.

ED 968 Seminar in Curriculum and Instruction

Prerequisites: ED 965, ED 966, ED 967

Discussion and evaluation of curriculum and instruction as applied to a real or theoretical construct.

ED 996 Research and Evaluation

Research and evaluation methods and designs; includes gathering and analyzing data, writing research, and making evaluation reports.

ED 997 Advanced Philosophical Foundations of Education

Examines the basic principles of some major philosophers and demonstrates their effect on contemporary educational theories in the western tradition.

ED 998 Advanced Psychological Foundations of Education

Analysis of major schools of psychology with attention to contemporary issues. Role of the educator in the learning process and application of psychological principles to specific classroom situations.

EE 900 Literature for Young Children

Survey of quality literature appropriate for early childhood, development of programs in literature and effective storytelling procedures.

EE 901 Curriculum for Early Childhood Education

Studies the components of designing a curriculum for young children including content and organization of program, facilities and arrangement of space, staffing, evaluation, and parent and community relationships.

EE 902 Methods and Materials in Early Childhood Education

Focuses on activities designed to enable young children to use their abilities to the fullest.

EE 903 Development of Reading Readiness and Beginning Reading Activities for the Young Child

Development of activities and materials based upon study of the reading readiness skills and of beginning reading approaches.

EE 904 Exploring Science in Early Childhood Education

Study of science within the conceptual ability of the young child.

EE 905 Evaluation and Remediation Techniques of Young Children with Special Needs

Multidisciplinary approach to the evaluation of children with special needs.

EE 906 Practicum in Early Childhood Education

An intensive supervised field experience involving daily interaction with young children of ages three to five.

EE 907 Intellectual Development in Early Childhood Education

Examines the intellectual levels of children based on current research including Piaget and others.

EE 908 Evaluation of the Young Child

Understanding and interpretating the results of psychological and educational tests of preschool age children.

EE 909 Supervision and Administration in Early Childhood Education

Outlines steps for the organization and administration of day care centers, nursery schools, and other programs for young children.

EE 910 The Pre-School Child with Special Needs

Detection, evaluation, and remediation of learning disabilities in young children from three years.

EE 919 Seminar in Early Childhood Education

Current issues and problems in the field of early childhood education.

EE 920 Independent Research in Early Childhood Education

For students wishing to pursue independent study in a specialized area of early childhood education.

EL 900 The Gifted Child

Methods for identifying the gifted student; characteristics and personal factors of the gifted; techniques and approaches for curriculum development.

EL 901 Using Computers in the Early Childhood/Elementary Classroom

Review and evaluation of early childhood/elementary courseware; development of courseware using authoring software. Overview of LOGO, word processing, and classroom management software.

EL 902 Newspapers in Education

Newspapers will be explored for their historical aspects, actual composition, freedom of the press, and behind-the-scenes production aspects. Learning activity packets will be developed utilizing newspapers.

EL 903 Theory and Research in the Elementary School Curriculum

Prerequisite: ED 996

Emphasizes ability to recognize, select, and pursue independent action research in one or more areas of the elementary school curriculum.

EL 904 Organization and Administration of the Elementary School

The many facets of elementary school administration and organization; the role of the principal as an administrator in the larger setting of present day education is stressed.

EL 905 Seminar in Current Issues in Elementary Education

Prerequisites: Three graduate level education courses approved by the student's advisor

Symposium approach. Reading, writing, and discussion relevant to major issues.

ES 900 Organization and Administration of Middle and Secondary School

The role of the principal and assistant principal in the administration of the secondary school.

ES 901 Language and Language Teaching

Prerequisite: Completion of at least two secondary education courses

A survey of linguistic theories and derived methodologies relevant to teaching a foreign language. 20 hour field experience included.

ES 902 Learning Skills for Adolescents

Reading, study and communication skill instruction, appropriate for content instruction in high schools. 15 hour field experience.

ES 903 The Art of Teaching Adolescents

Underlying reasons and means for pursuing excellence in teaching high school students; implications for discipline and leadership.

ES 904 Curriculum and Instruction for Adolescents

Developing and matching curriculum to high school students' personal and social needs. 15 hour field experience.

ES 905 Methods and Materials for Teaching Humanities

Prerequisite: Completion of at least two secondary education courses

Techniques and microteaching practice in teaching high school English, social studies and other humanities. 20 hour field experience.

ES 906 Methods and Materials for Teaching Science and Math

Prerequisite: Completion of at least two secondary education courses

Techniques and microteaching practice in teaching high school subject areas in math and the sciences. 20 hour field experience.

ES 907 Individualizing Instruction in the Middle and Secondary School

Examines ways in which teachers may individualize instruction in the secondary schools.

ES 908 Secondary Education Project/Seminar

Prerequisite: Completion of 21 credits of MEd concentration in secondary education

Integrating of required, core, and elective courses as applied to secondary education, pertinent to teaching situation of participant.

ES 909 Clinical Teaching Workshop

In-service instructional development using videotaped microteaching, peer supervision, and workshop training.

ES 910 Evaluation of Classroom Learning, Grades 9-12

Rationale and means for formative and summative evaluation, mastery learning, assessing higher order thinking, and improving learning attitudes and performance.

ES 911 Teaching Practicum

Prerequisite: Completion of required education courses; satisfaction of eligibility requirements.

Student teaching for Massachusetts Certification in High School. Seminar or other approved means for reflection on experience.

ES 912 Curriculum and Instruction in the Middle School

Addresses the unique nature of the middle school curriculum; with a focus on learning centers, mastery learning and learning activity packets.

ES 913 Methods and Materials for Teaching in the Middle School

Focuses on the interdisciplinary nature of instruction in the middle school with particular emphasis placed on the role of teaching.

English

Undergraduate Courses

EN 99 Developmental English

Concentration on language basics - spelling, vocabulary, grammar, usage, with practice in sentences and paragraphs. Three institutional credits. (Not counted toward graduation.)

EN 100 English for Communication Skills

Prerequisite: Consent of instructor

Individualized instruction in the English language to meet specific needs of foreign students.
Category 1.

EN 101 English Composition I

Review of mechanics and other writing principles with practice in writing sentences, paragraphs, and short essays. (Required of all freshmen, unless exemption is granted by the department.) This course is not recommended for beginning students for whom English is a second language.
Category 1.

EN 102 English Composition II

A continuation of EN 101. Further emphasis on writing and analysis of selected readings, instruction in the technique of research and the writing of a research paper. (Required of all freshmen unless exemption is granted by the department.)
Category 1.

EN 105 Introduction to Literature

A critical introduction to the principal genres of literature: poetry, drama, and fiction.
Category 1.

EN 130 World Literature I

Greek and Roman masterpieces in translation, including Homer, Greek tragedy, Plato, and Virgil as well as selections from the Bible.
Category 1.

EN 131 World Literature II

World masterpieces from the Renaissance to the modern period, with emphasis on continental works in translation.
Category 1.

EN 140 Introduction to Poetry
Examination and appreciation of the techniques and types of poetry including the sonnet, the pastoral, the mock heroic, and the ode.
Category 1.

EN 145 Introduction to Drama
Theories and development of tragedy and comedy; plays of Sophocles to Eugene O'Neill as illustrations of these and related genres.
Category 1.

EN 150 The Short Story
Introduction to the art of the short story through analysis of representative works.
Category 1.

EN 152 The Novelette
The major practitioners of the novelette over the past century: Conrad, Mann, Kafka, Dostoyevsky, and others.
Category 1.

EN 154 Twentieth-Century Literature
Major literary trends of the twentieth century.
Category 1.

EN 156 Mythology
Myths and legends of ancient Greece and Rome which form a part of the classical tradition in English literature.
Category 1.

EN 158 Science Fiction
The nature and function of nineteenth and twentieth-century science fiction literature: Wells, Verne, Asimov, Bradbury, and others.
Category 1.

EN 160 The Literature of the Bible
Biblical writings. Emphasis will be placed on the Old Testament.
Category 1.

EN 162 American Folklore
A multi-genre approach to the study of American folklore and the folk life. Some fieldwork will be required.
Category 3.

EN 167 Literature and Human Rights
An analysis of international creative writing dealing with the subject of human rights. Resource persons from different fields will be utilized.
Category 2.

EN 168 Film and Literature
An examination of the fundamental, rhetorical techniques of film and literature to determine the similarities of and differences between the two forms of expression.
Category 2.

EN 170 The Search for Identity: Literature of Self-Discovery
Analysis of several literary works which deal with the experience of self-discovery and the nature of self: Conrad, Hesse, D. H. Lawrence, Tolstoy, and others.
Category 3.

EN 210 Survey of American Literature I
Prerequisite: Completion of freshman year

American literature, beginnings to the Civil War; colonial and federal periods and transcendentalists.
Category 1.

EN 211 Survey of American Literature II
Prerequisite: Completion of freshman year

American literature since the Civil War; naturalism and realism.
Category 1.

EN 220 Survey of English Literature I
Prerequisite: Completion of freshman year

The development of English literature from the beginnings to 1798. Required of all English majors.
Category 1.

EN 221 Survey of English Literature II
Prerequisite: Completion of freshman year

The development of English literature from 1798 to the present. Required of all English majors.
Category 1.

EN 251 Advanced Expository Writing
Prerequisite: EN 102 or CLEP exemption

Instruction and practice in writing expository essays. Analysis of selected readings on a common theme or subject area.
Category 1.

EN 252 Technical Writing
Prerequisite: EN 102

Focuses on how to write and produce basic documents, from research and progress reports to brochures and manuals.
Category 1.

EN 253 Business Communications
Prerequisite: EN 102 Open to Business Administration majors only.

A consideration of accepted business communication conventions; correspondence, memoranda, survey reports, proposals, interim reports and project reports.
Category 1.

EN 254 Critical Writing
Prerequisite: Consent of instructor

Critical examination of English prose style; class reports; practice in the writing of analytical papers.
Category 2.

EN 256 Creative Writing: Prose I
Prerequisite: Consent of instructor

An opportunity to develop the student's writing ability and critical sense; work of students and professional authors will be analyzed.
Category 1.

EN 258 Creative Writing: Prose II
Prerequisite: Consent of instructor

A continuation of EN 256; instruction in composing various types of prose fiction.
Category 2.

EN 260 Creative Writing: Poetry I
Prerequisite: Consent of instructor

Developing the student's skill in the creation of poetry; attention to contemporary trends in American poetry.
Category 1.

EN 262 Creative Writing: Poetry II
Prerequisite: Consent of instructor, EN 260 not required

Conversation with practicing poets; preparation of small booklet of poems.
Category 1.

EN 264 Journalism and Mass Communications
Prerequisite: Completion of freshman year

Study of major forms of journalistic writing in relation to the background issues, trends, and impact of the American press.
Category 2.

EN 266 Journalism: Practice and Techniques
Prerequisite: Completion of freshman year

Training in developing, reporting, writing, and editing straight news, feature, profile, and interpretive stories.
Category 1.

EN 267 Journalism: Advanced Newswriting
Prerequisite: EN 266 or consent of instructor

Provides advanced training in the development and writing of straight news stories.
Category 1.

EN 268 Journalism: Feature Writing
Prerequisite: EN 266 or consent of instructor

Provides advanced training in finding, researching, developing, and writing feature stories for newspapers and magazines.
Category 3.

EN 269 Journalism: Interpretive Reporting
Prerequisite: EN 266 or consent of instructor

Provides advanced training in developing and writing profiles and interpretive stories.
Category 3.

EN 270 Journalism: Editing
Prerequisite: En 266 or consent of instructor

Training in copy selection, copy editing, story placement, headline writing, layout, and use of style books.
Category 3.

EN 271 Journalism Workshop
Prerequisite: Consent of instructor

Provides lab sessions in all aspects of journalism for advanced writers, emphasis on publication.
Category 3.

EN 300 History and Structure of the English Language
Prerequisite: Completion of freshman year

A study of the origins of the English language from Old English through Middle English to the present.
Category 2.

EN 302 Medieval Literature
Prerequisite: Completion of freshman year

Ideas of medieval Christianity, courtly love, and chivalric honor as they appear in lyric poetry, drama, and Arthurian romance.
Category 2.

EN 306 The Renaissance
Prerequisite: EN 220

The non-dramatic literature of Tudor England; emphasis on More, Wyatt, Sidney, Spenser, the earlier works of Shakespeare, Donne, and Bacon.
Category 2.

EN 308 Seventeenth-Century Literature
Prerequisite: Completion of freshman year

Prose and poetry of the era with special attention to the major works of Jonson and Donne.
Category 2.

EN 310 Eighteenth-Century Literature
Prerequisite: EN 120

The major figures of the Enlightenment with particular emphasis on satire: Dryden, Pope, Swift, Johnson, and Boswell.
Category 2.

EN 312 The English Novel of the Eighteenth Century
Prerequisite: Completion of freshman year

Purpose, range, and developments in the novel of the eighteenth century: Defoe, Richardson, Fielding, Smollett, Sterne, and others.
Category 2.

EN 314 The English Novel of the Nineteenth Century
Prerequisite: Completion of freshman year

Representative nineteenth-century novelists: Austen, Bronte, Dickens, Thackeray, Eliot, Hardy, Conrad and others.
Category 2.

EN 316 The Modern British Novel.
Prerequisite: Completion of freshman year

Selected works of major British novelists from 1900 through World War II: Joyce, Lawrence, Woolf, Forster, and others.
Category 2.

EN 318 Romantic Literature
Prerequisite: Completion of freshman year

Poetry and prose with special emphasis on the poetry of Wordsworth, Coleridge, Shelley, Byron, and Keats.
Category 1.

EN 320 Victorian Literature
Prerequisite: Completion of freshman year

Study of selected prose and poetry of the major writers of the Victorian period.
Category 3.

EN 324 Continental Novelists I
Prerequisite: Completion of freshman year

European novelists of the nineteenth and twentieth centuries including Dostoyevsky, Mann, Camus, and others.
Category 2.

EN 326 Continental Novelists II
Prerequisite: Completion of freshman year

An examination of later works by authors studied in Continental Novelists I.
Category 2.

EN 330 Modern Drama
Prerequisite: Completion of freshman year

The theories and development of realism, naturalism, expressionism, folk drama; representative plays from Ibsen to O'Neill.
Category 1.

EN 332 Contemporary Drama
Prerequisite: Completion of freshman year

The dramatic works and aesthetics of Beckett, Pinter, and other selected dramatists of the contemporary theatre.
Category 1.

EN 334 Modern Poetry
Prerequisite: Completion of freshman year

Close analysis of the development of British and American poetry from the late nineteenth century to World War II.
Category 2.

EN 336 Contemporary Poetry
Prerequisite: Completion of freshman year

Concentrates on poets whose major work was written after World War II; special attention to authors presently writing and publishing.
Category 2.

EN 338 Contemporary Novel
Prerequisite: Completion of freshman year

American and English novels after World War II with emphasis on living novelists.
Category 2.

EN 340 Contemporary Literature
A survey of the major trends in twentieth-century poetry, drama, and fiction.
Category 2.

EN 342 The American Novel I
Prerequisite: Completion of freshman year

The American novel from its origin to 1890; Brown, Cooper, Melville, Hawthorne, and others.
Category 2.

EN 344 The American Novel II
Prerequisite: Completion of freshman year

The American novelists from 1890 to World War II: Crane, Wolfe, Dreiser, Anderson, Hemingway, Steinbeck, and others.
Category 2.

EN 346 History of Literary Criticism
Prerequisite: Completion of freshman year

An historical introduction to speculation concerning the nature and function of literature: selections from Plato to Frye.
Category 2.

EN 350 Chaucer
Prerequisite: Completion of freshman year

A study of the development of Chaucer's versatile art and writings as expressive of the later Middle Ages.
Category 1.

EN 360 Shakespeare I
Prerequisite: Completion of freshman year

Major plays. Required of all English majors.
Category 1.

EN 362 Shakespeare II
Prerequisite: EN 360 or consent of instructor

A continuation of EN 360; includes the sonnets and less familiar plays.
Category 2.

EN 364 Elizabethan and Jacobean Drama
Prerequisite: Completion of freshman year

A critical analysis of plays by the contemporaries of Shakespeare: Kyd, Marlowe, Greene, Johnson, Ford, Webster, and others.
Category 3.

EN 380 Milton
Prerequisite: Completion of freshman year

A study of Milton's work from early poems to Paradise Lost, Paradise Regained, and Samson Agonistes; includes some prose pamphlets.
Category 2.

EN 382 The English Theatre: 1660-1780
Prerequisite: Completion of freshman year

A survey of plays of the Restoration period and the eighteenth century; genres of comedy and tragedy.
Category 3.

EN 390 The Irish Literary Revival
Prerequisite: Completion of freshman year

The Irish literary renaissance; the origins of the movement; includes Joyce, Yeats, Synge, O'Casey, Lady Gregory, and others.
Category 3.

EN 400 Seminar
Prerequisites: Completion of freshman year and consent of instructor

Student presentations on individual figures and particular problems in literature.
Category 1.

EN 410 Writing Practicum
Prerequisite: Consent of instructor

Training and practice in one-to-one assistance for students' writing for any course, stage, or specific need.
Category 1. 3-6 credits.

EN 425 Independent Study in English
Prerequisite: Consent of department

An opportunity for further study in a special field of interest under faculty supervision.
Category 1. 1-3 credits.

EN 450 Special Topics in Literature
Prerequisite: Consent of instructor

Specific content will vary in response to particular student and faculty interests.
Category 1.

EN 475 Internship in English
Prerequisite: Consent of department

Provides majors the opportunity to gain practical experience in areas where they may apply acquired critical and writing skills.
Category 1. 3-6 credits.

Graduate Courses

EN 900 History and Structure of the English Language
An examination of the phonology, syntax, and lexicon of English from its proto-Indo-European origins to its contemporary dialects.

EN 902 Approaches to the Literary Experience
An introduction to practical criticism which applies a broad spectrum of critical approaches to a selected group of literary examples.

EN 904 Advanced Critical Writing
A critical consideration of major trends in the history and development of prose style from the Baroque to James.

EN 910 The Romantic Flowering in American Literature
The development of Romantic idealism in the origins of American fiction and poetry.

EN 912 Edgar Allan Poe: Selected Writings
A examination of the poems, stories, and literary criticism of Edgar Allan Poe.

EN 914 Realism and Naturalism
Realism as practiced by Twain and clarified by Howells, following the transition of realism to naturalism under Norris and Dreiser.

EN 916 American Novel I
The development of the American novel from Charles Brockton Brown through Melville and Hawthorne.

EN 918 American Novel II
Begins with the American naturalistic novel and ends with the latest fiction of the century.

EN 920 Modern Drama
A survey of British, American, Irish, and continental drama from Ibsen through O'Neill.

EN 922 Modern Poetry
A study of the major figures who shaped American and British poetry between 1910 and 1950.

EN 930 English Literature to 1640
An historical and critical survey of works from the Anglo-Saxon and medieval periods through the Renaissance to 1640.

EN 932 Restoration and Neoclassicism: 1660-1798
An historical and critical survey of works of the Augustan Age including Dryden, Pope, Swift, Goldsmith, Johnson, Boswell and others.

EN 934 The Romantics and the Victorians: 1798-1901
An historical and critical survey of the prose and poetry of the nineteenth century including Wordsworth, Coleridge, Byron, Shelley, Keats, Tennyson, Arnold and Browning.

EN 936 The Development of the English Novel
A consideration of the development of the genre through the works of several of its major practitioners.

EN 938 The Worlds of Charles Dickens
Major aspects of the life and art of Dickens will be examined in a variety of contexts.

EN 940 The Modern British Novel
Major modern novels of Joyce, Lawrence, Forster, Woolf and others.

EN 950 Seminar
Provides the opportunity for the student to explore the works of one or two major authors in depth.

EN 960 Special Topics
Exploration and consideration of a theme or topic of mutual interest to instructor and students.

Foreign Languages

Undergraduate Courses

FL/ARB 100 Elementary Arabic

Introduction to reading and writing, modern standard, and classical Arabic.
Category 1.

FL/ARB 101 Elementary Arabic II

Continuation of Elementary Arabic I for students who have had the prior course or its equivalent.
Category 1.

FL 110 Introduction to International Understanding

Culture, culture shock, cross-cultural mini-dramas, nonverbal communication, culture capsules, and assimilators are studied to guide students in their approach to unfamiliar cultures.
Category 2.

FL 201 Introduction to Linguistics

Traditional and contemporary theories of phonetics, grammar, semantics, semiotics, psychology, and sociology of language. Illustrations mostly from English.
Category 1.

FL 400 Internship in Foreign Languages

Prerequisite: Consent of department

Completion of a written foreign language project by students assigned to various private and public agencies. Dual supervision by agency and faculty.
Category 1.

FL 425 Independent Study in Foreign Languages

Prerequisite: Consent of instructor.

Study of special topic in French, Spanish, or other foreign language, designed to provide study of a special field not presented in other course offerings.
Category 1.

FRENCH

FR 101 Introduction to French Language and Culture I
Fundamentals of spoken and written French with a broad survey of French culture.
Category 1.

FR 102 Introduction to French Language and Culture II
Continuation of FR 101.
Category 1.

FR 103 Beginning French I
Fundamentals of pronunciation, patterns of speech, basic structures. Develops listening, speaking, reading and writing skills.
Category 1.

FR 104 Beginning French II
Continuation of FR 103.
Category 1.

FR 210 Intermediate French I
Prerequisite: FR 104 or equivalent

Review of grammar, verb structure, written and oral composition, selected readings and comprehension exercises.
Category 1.

FR 211 Intermediate French II
Prerequisite: FR 210 or equivalent

Continuation of FR 210.
Category 1.

FR 214 Intermediate French I: Reading and Translation
Prerequisite: FR 104 or equivalent

Continuation of FR 211.
Category 2.

FR 215 Intermediate French II: Reading and Translation
Prerequisite: FR 214 or equivalent

Continuation of FR 214.
Category 2.

FR 216 Intermediate French I: Conversation
Prerequisite: FR 104 or equivalent

Conversational patterns, idioms, dialogues, special vocabularies for travel and occupations.
Category 1.

FR 217 Intermediate French II: Conversation
Prerequisite: FR 216 or equivalent

Continuation of FR 216.
Category 1.

FR 321 Advanced French
Prerequisite: Two FR 200 level courses

Intensive review of grammar, practice in translation and composition. Conducted in French.
Category 3.

FR 322 Introduction to French Phonetics
Prerequisite: Two FR 200 level courses

Theory and practice in French sound system, clinical approach.
Category 3.

FR 323 French Conversation and Composition
Prerequisite: Two FR 200 level courses

Pronunciation and comprehension exercises, discussions, practice in paragraph, essay, and letter writing.
Category 3

FR 324 Advanced French Conversation
Prerequisite: FR 321 or FR 323

Development of fluency and accuracy, free discussions, prepared oral presentations, practical exercises in oral expression.
Category 3

FR 325 Advanced French Composition
Prerequisite: FR 321 or FR 323

Fine points of French grammar, essays, reports, practical correspondence; English to French translation.
Category 3

FR 331 General French Civilization
Prerequisite: Two FR 200 level courses

Significant aspects of French history, geography, and cultural achievements to World War I.
Category 3

FR 332 Contemporary French Civilization
Prerequisite: Two FR 200 level courses

French art, politics, and society since World War I.
Category 3

FR 333 The French in America
Prerequisite: Two FR 200 level courses

A broad historical and cultural survey of the French presence in America from the explorations of Champlain and Cartier to modern times.
Category 3

FR 341 Introduction to French Literature
Prerequisite: Two FR 200 level courses

Major periods and genres of French literature; for majors and minors.
Category 3

FR 342 Medieval and Renaissance French Literature
Prerequisite: Two FR 200 level courses

Selections from the epic, drama, lyric poetry, and the major prose writers.
Category 3

FR 343 French Literature of the Seventeenth Century
Prerequisite: Two FR 200 level courses

Major authors of the classical period with emphasis on Corneille, Moliere, and Racine.
Category 3

FR 344 Eighteenth Century French Literature
Prerequisite: Two FR 200 level courses

Major works of Montesquieu, Voltaire, Diderot, Rousseau, and a representative play and novel.
Category 3

FR 345 Nineteenth Century French Literature
Prerequisite: Two FR 200 level courses

Major authors of the romantic, realistic, and symbolist movements.
Category 3

FR 346 Twentieth Century French Literature
Prerequisite: Two FR 200 level courses

Major novelists, dramatists, and poets from the turn of the century to the present.
Category 3.

FR 401 Seminar in French Studies
Prerequisite: For advanced students

Special topics in French language, literature or civilization.
Category 3.

FR 402 Independent Study in French
Prerequisite: See description.

Study of a special topic. Both content and eligibility subject to departmental guidelines and approval.
Category 1.

FR 475 Internship in French
Prerequisite: Consent of instructor and department

Provides majors practical experience in areas where speaking, reading, and writing skills may be applied.
Category 1.

GERMAN

GN 101 Beginning German I

A conversational approach; useful, travel-oriented vocabulary and idioms; some readings and writing grammar as necessary; discussion of German customs.
Category 3.

GN 102 Beginning German II
Prerequisite: GN 101

Continuation of GN 101.
Category 3.

GN 210 Intermediate German I
Prerequisite: GN 102 or equivalent

Review of fundamentals; presentation of more complex stylistic features of German; selected introductory readings as an introduction to culture, conversation, composition.
Category 3.

GN 211 Intermediate German II
Prerequisite: GN 210 or equivalent

Continuation of GN 210.
Category 3.

LATIN

LA 101 Latin I

Fundamentals of grammar, syntax, and vocabulary. Survey of Roman classical, cultural, and social history.
Category 3.

LA 102 Latin II
Prerequisite: LA 101

A continuation of LA 101. Fundamentals of grammar, syntax, and vocabulary.
Category 3.

SPANISH

Undergraduate Courses

SP 100 Introduction to Spanish Language and Culture
Introduction to spoken and written Spanish with a comparative study of Hispanic and American culture.
Category 1.

SP 101 Fundamental Spanish I
Basic oral and written proficiency for daily communication; may be taken as a self-contained unit or as a basis for further development. Audio-visual method.
Category 1.

SP 102 Fundamental Spanish II
Prerequisite: SP 101 or equivalent

Continuation of SP 101.
Category 1.

SP 210 Intermediate Spanish I: Conversation
Prerequisite: SP 102 or equivalent

Conversational patterns, idioms, dialogues, and special vocabularies for travel and occupations.
Category 1.

SP 211 Intermediate Spanish II: Conversation
Prerequisite: SP 210 or equivalent

Continuation of SP 210.
Category 1.

SP 212 Intermediate Spanish I
Prerequisite: SP 102 or equivalent

Recommended for majors. Reading, translation, and intensive review of grammar and structure of language; introduction to Spanish literature.
Category 1.

SP 213 Intermediate Spanish II
Prerequisites: SP 210 or equivalent

Continuation of SP 212.
Category 1.

SP 321 Advanced Spanish Composition I
Prerequisite: Two SP 200 level courses

Facility in prose writing; study of style of selected authors; variety of expression through word discrimination.
Category 3.

SP 322 Advanced Spanish Composition II
Prerequisite: SP 321 or equivalent

Continuation of SP 321.
Category 3.

SP 323 Spanish Conversation I
Prerequisite: Two SP 200 level courses

Intensive conversational practice for improving intonation, pronunciation, fluency, review of language usage; introduction to phonetics.
Category 3.

SP 324 Spanish Conversation II
Prerequisite: SP 323 or equivalent

Continuation of SP 323.
Category 3.

SP 331 Spanish Civilization
Prerequisite: Two SP 200 level courses

Spanish social, cultural, and political life.
Category 3.

SP 332 The Hispanic World Today I
Prerequisite: Two SP 200 level courses

Social, economic and political institutions; value systems and customs. Conducted in Spanish.
Category 3.

SP 333 The Hispanic World Today II
Prerequisite: Two SP 200 level courses

Continuation of SP 332.
Category 3.

SP 341 Readings in Spanish Literature
Prerequisite: Two SP 200 level courses

Selected masterpieces from Middle Ages to present; social, cultural, and stylistic features of different periods. Recommended as a first course in Spanish literature.
Category 3.

SP 342 Masterpieces of Spanish Literature of the Middle Ages
Prerequisite: Two SP 200 level courses

Selections from the epic, drama, lyric poetry, and major prose writers.
Category 3.

SP 343 Literature of the Spanish Renaissance
Prerequisite: Two SP 200 level courses

Works of the idealistic and realistic literary currents in narrative prose: caballaresque, pastoral, and picaresque novels.
Category 3.

SP 344 Cervantes
Prerequisite: Two SP 200 level courses

The Quijote, selected Novelas ejemplares.
Category 2.

SP 345 Seventeenth Century Drama
Prerequisite: Two SP 200 level courses

Lope de Vega, Tirso de Molina, Calderon and other major dramatists of the age. History of seventeenth century Spanish drama and introduction to Spanish versification.
Category 2.

SP 346 Nineteenth Century Spanish Literature: Romanticism
Prerequisite: Two SP 300 level courses

Poetry, essay, drama, and novel of the Peninsular Romantic period.
Category 3.

SP 347 Nineteenth Century Spanish Literature: The Novel
Prerequisite: Two SP 200 level courses

Development of the nineteenth century novel; selected works of Valera, Galdos, and others.
Category 3.

SP 348 Contemporary Spanish Literature
Prerequisite: Two SP 200 level courses

Literary works from the generation of 1898 to the present.
Category 2.

SP 349 Spanish-American Literature
Prerequisite: Two SP 200 level courses

Representative works from South and Central American authors from the colonial period to the present.
Category 2.

SP 401 Advanced Study: Special Topics
Prerequisite: For advanced students

Special topics in language, literature, civilization or field work of mutual interest to student and instructor.
Category 3.

SP 402 Independent Study in Spanish
Prerequisite: See description.

Study of a special topic. Both content and eligibility are subject to departmental guidelines and approval.
Category 1.

SP 475 Internship in Spanish
Prerequisite: Consent of instructor and department

Provides majors practical experience in areas where their speaking, reading, and writing skills may be applied.
Category 1.

Graduate Courses

SP 923 History and Culture of Puerto Rico
An in-depth study of the country.

SP 924 The Latin Americans in USA.
Their origins, distribution, sociocultural organizations and attitudes. Special attention to the Spanish-speaking community of the area. Classes conducted in Spanish.

SP 925 Travel Study Course
Trip will be preceded by a seminar. Classes conducted in Spanish.

SP 926 Seminario Intercultural de Estudios Hispano-Americanos
A contrastive study of Hispanic and American culture and personality and survey of different methodologies to teach culture. Classes conducted in Spanish.

SP 930 Spanish Novel of the Nineteenth and Twentieth Centuries
A study of the most representative novelists of the nineteenth and twentieth centuries in Spain. Classes conducted in Spanish.

SP 931 Latin American Novel of the Nineteenth and Twentieth Centuries
A study of major figures in Latin American narrative. Classes conducted in Spanish.

SP 940 Independent Study in Spanish
Prerequisite: Consent of the coordinator

SP 941 Special Problems in Spanish
Content will vary in response to particular student and faculty interests.

Geography and Geology

GE 101 Physical Geography: The Physical Environment

Geographic principles of location; characteristics of landforms, soil, climate, minerals, water, flora, and fauna.
Category 1.

GE 102 Cultural Geography: The Cultural Environment

Man-land relationships. Cultural changes in regions; location, characteristics of various cultural elements: population, economic activities, languages, religious, urbanization, and political patterns.
Category 1.

GE 110 World Regional Geography I

This survey examines characteristics of land and peoples of Europe, the Middle-East, and the USSR with emphasis on landscapes and cultures.
Category 3

GE 111 World Regional Geography II

Analysis of the physical, cultural, and economic regions of the Orient, Asia, Africa, Australia, and the Americas.
Category 3

GE 120 Introduction to Geology

Introduction to geological science: rocks and minerals, internal forces and crustal structures, effects of glaciers, and other surface processes.
Category 1.

GE 121 Physical Geology Lab
Prerequisite: GE 120 (may be taken concurrently)

Involves exercises in rock and mineral characteristics, topographic, and geologic map interpretation, air photo analysis, and local field study.
Category 1. 1 credit.

GE 205 Meteorology
Prerequisite: Consent of instructor

Weather elements, frontal storms, air mass characteristics, winds, temperature, precipitation, and pressure patterns throughout the world; weather instruments, forecasting.
Category 1.

GE 210 Geography of North America
Manufacturing, agriculture, and trade in the various regions of the continent. Land utilization as affected by the physical environment.
Category 1.

GE 220 Earth History
Prerequisite: GE 120

Historical evolution of the earth, its surface features, and life forms through geologic time. Emphasis on the North American continent.
Category 2.

GE 225 Oceanography
The principles of physical, chemical, biological, and geological oceanography.
Category 1.

GE 230 Geography of Europe
European landforms, people, culture, economics, and problems facing the individual countries.
Category 1.

GE 250 Hydrology
Physical, economic, political, and social problems in water resource planning are considered in a simulation context.
Category 2.

GE 260 Geography of South America
Physical, economic, social, and cultural analysis of the individual countries: historical background to present-day development.
Category 2.

GE 270 Geography of Middle America
Prerequisites: GE 101, GE 102

Present growth and trends in Middle-America and the Caribbean realm as related to the landscape and culture of the people.
Category 2.

GE 280 Geography of Manufacturing
A systematic study of the spatial distribution of manufacturing activities; analysis of their locations employing industrial location theory.
Category 1.

GE 285 Economic Geography
Geographic factors contributing to the localization of economic activities are analyzed. Distribution, production, and trade are considered.
Category 2.

GE 290 Conservation and Natural Resource Management

Problems in resource management are analyzed from a physical, social, economic, and political perspective. Theory and applied examples are considered.
Category 2.

GE 300 Problems in Energy Resources

Prerequisite: GE 101

Contemporary problems of energy resources; emphasis on supply, demand, and availability of alternative energy resources.
Category 2.

GE 310 Geomorphology

Prerequisite: GE 101 or GE 120

A study of landscapes and the natural forces that shape them. Influences of man's activities and role of climate stressed.
Category 2.

GE 311 Regional Geomorphology of the United States

Prerequisite: GE 120 or GE 310

Study of selected regions of our country with respect to underlying geology and resulting landscape features. Considerable map study included.
Category 2.

GE 316 Computer-Aided Cartography and Graphics

Production of graphs and maps using the line printer, plotter, digitizer, interfaced with Tektronix, and IBM-PC equipment.
Category 3.

GE 320 Climatology

Prerequisite: GE 101

Characteristics of the atmosphere; climates of the continents and classification of the world's climates.
Category 1.

GE 325 Glacial Geology

Prerequisite: GE 120

Glaciers and their dynamics; investigation of the Quaternary Ice Age and its profound effects on world scenery.
Category 2.

GE 330 Geography of Asia

Prerequisite: Consent of instructor

Physical and cultural environmental analysis: rapid changes, developments of recent origin, and problems facing the individual countries.
Category 1.

GE 340 Urban Geography: The Urban Environment

Prerequisite: GE 102

World urbanization, location, and central place concepts, economy of cities, land use patterns, urban, physical, and societal environmental problems.
Category 1.

GE 345 Geography of Africa

Prerequisite: Consent of instructor

Africa divides into north Africa, Saharan Africa and southern Africa. Study of lands, peoples, cultures, economics, political and future problems.
Category 1.

GE 350 Introduction to Urban and Regional Planning
Prerequisite: GE 102

Understanding of purpose, function, tools, and methodology of urban and regional planning; focus on land-use planning, land-use controls, and model plans.
Category 2.

GE 351 Introduction to Cartography
Prerequisite: GE 101

Theory and construction of maps, charts, and diagrams.
Category 1.

GE 352 Cartography and Geographic Techniques
Prerequisite: GE 351

Continuation of GE 351 with an emphasis upon statistical analysis.
Category 1.

GE 355 Land-Use Planning Workshop
Prerequisite: Consent of instructor

Students undertake a land-use planning project for a local community utilizing an ecological approach and environmental planning methodology.
Category 2.

GE 360 The Middle East: Its Changing Environments
Prerequisite: GE 102

The Middle East: geography, society, economics and political structure.
Category 3.

GE 370 Political Geography
Prerequisites: GE 101, GE 102

Space structures, growth, problems of a nation-state: modern world political problems.
Category 3.

GE 380 Computer Application for the Social Science
Prerequisite: GE 352 or basic course in statistics

Use of the SPSS system of computer programs in the analysis of social science data.
Category 1.

GE 390 Geography of the USSR
Prerequisite: GE 101

A study of the physical environments, regional economies, populations, and cultural problems of a giant in a tri-partite world power play.
Category 1.

GE 450 Readings and Directed Research
Prerequisites: GE 101, GE 102, GE 210, GE 351, GE 352, and consent of department

Directed study on selected topics; open to senior majors.
Category 1.

GE 460 Geography Internship
Prerequisites: All department requirements for major fulfilled and consent of department

Students assigned to various government and private agencies under joint supervision of agency and faculty.
Category 3. 1-6 credits.

GE 470 Selected Topics in Geography
Prerequisite: Consent of instructor

Topic or subject to be announced in advance; topic to be relevant to student needs and interests and subject to availability of professor.
Category 2.

Health Science

Undergraduate Courses

HE 100 Personal Health

Physical, mental, and emotional aspects of well-being and how to maintain and increase the quality of one's lifestyle.
Category 1.

HE 110 Drugs and Society

Drug use and abuse, and implications for personal, family, and societal choice.
Category 1.

HE 120 Health and Nutrition

Nutritional needs, weight control, healthy diets, myths, and nutritional aids to better health.
Category 1.

HE 130 Human Sexual Awareness

The processing of feelings of self as a sexual person and applications to individual lifestyles.
Category 1.

HE/PE 140 Introduction to Creative Arts Therapies

An experiential and didactic introduction to the separate arts therapies: movement, art, music, and language arts, emphasizing the creative process.
Category 3.

HE 200 Consumer Health

Prerequisite: HE 100

Current information and guidelines to reliable sources necessary to develop intelligent consumers capable of wisely selecting health products and services.
Category 1.

HE 210 Feminist Health

Overview of women's health issues: women in the health marketplace, a woman's right to control her body, media images and illness, eating disorders, therapy, alcohol, aging, and the women's health movement.
Category 2.

HE 220 Mental Health Education
Prerequisite: HE 100

Examination of mental health as a variable: its creation and the obstacles to sound mental health and positive self-concept.
Category 2.

HE 230 Human Sexuality and Sex Education
Prerequisites: HE 100, HE 130

Focus on the need for and understanding of sex education, along with the process of implementing sexuality education, with emphasis upon teacher preparation.
Category 3.

HE/PE 260 First Aid: Advanced Theory and Skill

Common emergencies, cardiopulmonary resuscitation, auto extrication, and emergency childbirth. Opportunity for instructor rating.
Category 3.

HE/PE 275 Fitness for Life

Knowledge of health-related fitness components and their effect on total wellness; emphasis on developing personalized fitness program, namely cardiovascular endurance.
Category 1.

HE/PE 280 Individualized Stress Management and Relaxation

Knowledge of the causes, symptoms, and related disorders of stress; emphasis on techniques of stress reduction through meditation, exercise, etc.
Category 1.

HE/PE 285 Relaxation Techniques

The focus of the course will be on researching and experiencing various Eastern and Western relaxation modalities. Examples include meditation, guided imagery, hatha yoga, and biofeedback.

HE 300 Values Clarification
Prerequisite: HE 100

Examination of values which guide our health/wellness decisions and behaviors.
Category 3.

HE 310 Group Processing
Prerequisite: HE 100

Consideration of the process of dynamics forming the emotional, relational, and other components of health-producing group behavior.
Category 3.

HE 320 Aging and Death
Prerequisite: HE 100

Health implications revealed as psychological and social surrounding the phenomena of aging and death.
Category 2.

HE 340 Health Counseling
Prerequisites: HE 100, HE 130, HE 310

A study of the counseling implications involved in health. Awareness of the counseling process and referral.
Category 2.

HE 350 Community Health Education
Prerequisite: Advanced standing

Opportunity for exploration of on-going community health education programs and their impact upon that community.
Category 3.

HE 360 Strength Training
Prerequisite: Advanced standing

Identification of strengths and weaknesses in teaching and interpersonal relationships.
Category 3.

HE 370 Critical Issues in Health
Prerequisite: Advanced standing

An examination of the most current critical issues in health.
Category 3.

HE 380 Teaching Methods and Skills in Health
Prerequisite: Advanced standing

Focus on the role and responsibility of the classroom teacher as a major force in the creative teaching-learning environment.
Category 3.

HE 390 Environmental Health
Prerequisite: HE 100

Nature and effects of health hazards including radiation, noise, pollutants (air, water), food, housing, accidents, etc.
Category 3.

HE 400 Departmental Workshop
Prerequisite: Consent of instructor

An eclectic course that will bring to the department the most important issues that relate to health and health care.
Category 2.

HE 440 Practicum in Health
Prerequisite: Advanced standing

A field experience option required of all health majors.
Category 1.

HE 450 Independent Study in Health
Prerequisite: Advanced standing

Creative, independent learning experiences designed and initiated by health majors.
Category 1. 1-3 credits.

Graduate Courses

HE 910 Health Coordinator
Investigation of the skills necessary in developing, implementing, and coordinating a school health education program.

HE 917 Creative Teaching in Health
Emphasis placed on creative aspects of teaching with a focus on values education: transpersonal education and affective education.

HE 918 Curriculum Development in Health
Exploration of planning models and their integration with theories of health behavior and education.

HE 920 Strength Training in Health
Workshop to help participants learn to cope constructively with stressful situations commonly experienced in helping relationships.

HE 922 Health Care Systems
A study of historical development of the American health care system and recent trends in organization, administration, and legislation.

HE 923 Education and Training in Health Care
Provides an historical, philosophical and theoretical background to adult learning and health education.

HE 924 Education for Wellness
Utilizing preventive and wholistic measures to reduce stress and illness. Focuses on alternative approaches to wellness.

HE 925 Politics and Policies of Health Care
Health care regulation and cost by government including the transition from private and professional to federal and state control.

HE 930 Drugs, Alcohol, and Tobacco
The pharmacology of various drugs and their physiological effects.

HE 932 Advanced Nutrition
Study of recent advances and trends in the relationship of diet and nutrition.

HE 935 Human Sexuality
Historical, political, multicultural and personal approaches to understanding various aspects of human sexuality.

HE 936 Women's Sexuality Issues
The history and politics of issues affecting women's sexual health: prostitution, infertility, contraceptive health risks, sexual violence and reproductive rights.

HE 937 Women and Minority Health Issues
An examination of the effects of sexism and racism on the health and health care of women and minorities.

HE 940 Epidemiology
Classic epidemics, evaluation of epidemiological principles and techniques of investigation, and epidemiological analysis of selected types of diseases.

HE 942 Research Methods in Health
An introduction to research and statistical designs as directly related to health science and allied health disciplines.

HE 943 Current Literature in Health
Critical analysis of current and past research findings concerning health knowledge, attitudes, behaviors and educational techniques.

HE 945 Seminar in Health
Current health and social problems emphasizing controversial issues of the eighties analyzing ethical, scientific and political foundations.

HE 950 Independent Study in Health
Open to graduate students who wish to develop an independent research project.

History

Undergraduate Courses

HI 101 Western Civilization I

From the ancient civilizations to 1648. A study of Western development and tradition in that time period.
Category 1.

HI 102 Western Civilization II

From 1648 to recent times. A study of Western development and tradition in that time period.
Category 1.

HI 111 US History I

From colonization through the Civil War era. A study of politics, society, economy, diplomacy, and culture in that period.
Category 1.

HI 112 US History II

From the Civil War era to recent times. A study of politics, society, economy, diplomacy, and culture in that period.
Category 1.

HI 200 Colonial History I

Prerequisites: HI 111, HI 112

European background and reasons for American colonization, intercolonial rivalries, formation of the 17th century English colonies. British colonial policy to 1689.
Category 2.

HI 201 Colonial History II

Prerequisites: HI 111, HI 112

Establishment of Georgia, French and Indian Wars, 18th century colonial civilization, causes of the American Revolution, the Revolution to 1783.
Category 2.

HI 205 American Indian: Past and Present

The American Indian in history, the encounter between Indian and European civilizations, and the relationship of Indian culture to Indian history.
Category 2.

HI 206 A History of Warfare

An examination of the role of war in conflict resolution, great battles which changed history, and the impact of technology on war.
Category 2.

HI 207 American West: Myth and Reality

The historic development of the West, its impact on the American character, and a study of how myths become accepted "fact."
Category 2.

HI 208 American Immigrant History

Survey of immigration. Topics such as old-world background, impact on US, nativism, cultural pluralism, religion, mobility, family and politics.
Category 1.

HI 209 Afro-American History

Prerequisites: HI 111, HI 112

The role of blacks in American society from the seventeenth century to the present, emphasizing the institution of slavery.
Category 3.

HI 210 Psychological Foundations of Current History

An attempt to ascertain certain climates of opinion within which far-reaching decisions were both made and responded to.
Category 1.

HI/PO 211 History of US Foreign Policy I

Colonial origins to the era of the Spanish-American War. The sources and development of US foreign policy in that period.
Category 1.

HI/PO 212 History of US Foreign Policy II

From 1900 to recent times: US foreign policy traditions and the challenges of great power status.
Category 1.

HI 215 American Intellectual History

Prerequisite: HI 111 or HI 112

Puritanism, the Enlightenment, romanticism, Darwinism, pragmatism, naturalism, fundamentalism, the liberal-progressive ethic, the new left and neo-conservatism.
Category 3.

HI 216 Economic History of the US

An introduction to United States economic development; particular attention will be paid to industrialization and the labor force.
Category 2.

HI 217 US Social History

Survey of social and cultural history. Topics such as family, religion, education, popular literature, architecture, transportation and reform.
Category 2.

HI/PO 218 US Constitutional History I

The development of constitutional history as seen in decisions of the US Supreme Court and their effects from 1789 to 1921.
Category 1.

HI/PO 219 US Constitutional History II

Supreme Court decision-making since 1921: federal-state relations, civil liberties, civil rights, loyalty program, labor, rights of defendants.
Category 1.

HI 223 History of Modern France
Prerequisite: Completion of freshman year

Domestic and foreign problems of nineteenth and twentieth century France.
Category 2.

HI 224 English History I
Prerequisite: Completion of freshman year

English history from Roman Britain to 1688: the assimilation of the Anglo-Saxons with the Celts, the Norman Conquest, reign of Elizabeth I, Puritan revolt.
Category 2.

HI 225 English History II
Prerequisite: HI 224

English history from the reign of William and Mary to the present. Focus on the expansion of the British Empire and the growth of industrialization.
Category 2.

HI 231 European Intellectual History I
Prerequisite: Completion of sophomore year

The main theoretical works, philosophic, psychological and scientific, from Plato to the eighteenth century.
Category 3.

HI 232 European Intellectual History II
Prerequisite: Completion of sophomore year

The main theoretical works, philosophic, psychological and scientific, of the nineteenth and twentieth centuries.
Category 3.

HI 233 History of Latin America
Prerequisite: One year of history or consent of instructor

The Spanish Conquest, colonial institutions, wars of independence and development of Mexico, Brazil, and Argentina.
Category 3.

HI 234/HI 235 Russian History I and II
Prerequisite: One year of history

A study of major political, economic, social, intellectual, and diplomatic currents in Russia, from the Kievan era to Stalin.
Category 1. 6 credits.

HI 236/HI 237 Modern Far East History I and II
Prerequisite: Completion of freshman year

Civilizations dramatically different from our own, focusing upon China, Japan, and Southeast Asia since 1600.
Category 1. 6 credits.

HI 241 English Constitutional History
Prerequisite: Completion of freshman year

The development of English constitutional history and principles from the conquest by the Anglo-Saxons to 1776.
Category 1.

HI 242 History of Early Modern Europe
Forces that shaped Europe since the Reformation: the political, economic, and intellectual context of the external expansion as well as the internal turmoils, such as the Thirty Years War and the European economy to 1789.
Category 2.

HI 243 European Urban History

The process of accelerating urbanization in Europe since the eighteenth century: cultural, social, economic, and political aspects of urban life.
Category 3.

HI 244 American Urban History

The process of accelerating urbanization in America since the nineteenth century: cultural, social, economic and political aspects of urban life.
Category 2.

HI 245 History of Modern Germany I

The origins and growth of Brandenburg-Prussia; their impact on the rest of Germany from the foundation of the Holy Roman Empire to the emergence of the Second Reich in 1871.
Category 1.

HI 246 History of Modern Germany II

German economic and political crises from 1870 to the present.
Category 1.

HI 249 US Labor History I

Prerequisites: HI 111, HI 112

The relationship between workers, their employers, and the surrounding community between 1815 and World War II.
Category 2.

HI 250 US Labor History II

Prerequisites: HI 111, HI 112

Examines the American Labor movement from World War II to the present.
Category 2.

HI 251 Age of Jackson

Prerequisites: HI 111, HI 112

Political, social, economic, and intellectual developments in the second quarter of the nineteenth century.
Category 3.

HI 252 Civil War and Reconstruction

Prerequisite: Consent of instructor

Sectionalism, slavery, and modern industrial warfare as well as their impact on the political and racial fabric of America.
Category 2.

HI 253 The Age of Reform: 1877-1920

Prerequisite: Completion of freshman year

An analysis of the transformation of America, including reform response to the Gilded Age's industrialization, urbanization, and immigration patterns.
Category 2.

HI 254 Twentieth Century US History

Prerequisites: HI 111, HI 112

Contemporary American civilization from the Harding Administration into the post-World War II period.
Category 1.

HI 261 Middle East History I

The rise and expansion of Islam: the Caliphate, Muslim religion, civilization, and its impact on the West, decline of medieval Islam.
Category 2.

HI 262 Middle East History II

The Ottoman Empire: expansion, institutions, impact on Europe, decline of the Empire.
Category 2.

HI 300 The Early National Period of the US: 1783-1829
Prerequisite: Consent of instructor

The Confederation, Constitution, the emergence of political parties, and the rise of American nationality.
Category 3.

HI 305 Ancient History
Prerequisite: Completion of freshman year

The history, culture, and politics of ancient Greece and Rome.
Category 2.

HI 306 Renaissance and Reformation
Prerequisite: Completion of freshman year

Intellectual and cultural history of Europe from the middle of the thirteenth to the middle of the sixteenth century.
Category 3.

HI 307 The Age of the Bourbons
Prerequisite: Completion of freshman year

Domestic and foreign problems of sixteenth, seventeenth, and eighteenth century France.
Category 3.

HI 308 Europe in the Age of Revolution and Nationalism: 1789-1870
Prerequisite: Completion of freshman year

The French Revolution, Napoleon, Congress of Vienna; nationalism, liberalism, socialism; Second French Empire; German and Italian unification.
Category 2.

HI 309 Diplomatic History of Modern Europe
Prerequisite: Completion of freshman year

The foreign policies of the major European nations from 1870 to the present.
Category 2.

HI 312 Twentieth Century Europe I
Prerequisites: HI 101, HI 102

The politics and economics of WW I; the pattern of restlessness between the wars in the rise of dictatorship in Germany, Italy, and Spain; the regimentation of economic control.
Category 1.

HI 313 Twentieth Century Europe II
Prerequisites: HI 101 and HI 102

Politics and diplomacy of World War II; the dynamics of the rebirth of Europe since VE Day. The effects of total war upon Europe.
Category 1.

HI 314 Twentieth Century Middle East History
Prerequisite: Completion of freshman year

The Young Turk Revolution, division of Ottoman Empire in World War I; rise of new states; the Arab-Israeli conflict.
Category 1.

HI 315 Historical Quantification
Prerequisite: Completion of sophomore year

Theoretical statistical procedures related to historical studies; use of the computer to manipulate and test these procedures.
Category 3.

HI/PO 338 History of Political Theory I
Prerequisite: Completion of sophomore year or consent of instructor

The development of political thought from the Greeks to the Enlightenment.
Category 2.

HI/PO 339 History of Political Theory II
Prerequisite: Completion of sophomore year or consent of instructor

The development of political thought from the Enlightenment to the present.
Category 2.

HI 400 Independent Study in History
Prerequisite: Consent of department or instructor

Special topics for advanced research and study under the guidance of a faculty member.
Category 1.

HI 410 American History and Historians
Prerequisite: Written consent of instructor

Intensive study of original sources and preparation of a research paper, analysis of major schools of historical thought.
Category 3

HI 420 Seminar in American Constitutional History
Prerequisite: Written consent of instructor

Reading, research, and discussion on a specially selected phase of American constitutional development; an original paper of significant scholarship is required.
Category 3

HI 430 European History and Historians
Prerequisite: Written consent of instructor

The study of Europe's major schools of historical thought with emphasis on how Europe's history has been written.
Category 3

HI 435 Issues in Modern Middle East
Prerequisite: One Middle East course or permission of instructor

Emphasizes reading, research, and writing. Students will choose issues, research them, make a class presentation, then develop the presentation into a paper.
Category 3

HI 440 Internship in American Studies
Prerequisite: Consent of instructor

Internships in museums, archives, government agencies, etc. Performing a variety of tasks at beginning professional level in cooperating institutions.
Category 1. 6-12 credits.

Graduate Courses

HI 910 The Study and Writing of History
Historical methodology, modern historiographical views, and the emergence of the New History; i.e., psychohistory, family history, and quantitative history.

HI 912 Industrial Revolution: Past, Present, Future
Prerequisite: Survey course in modern history

A comparison of the European and American Industrial Revolutions and their consequences from the eighteenth through the twentieth centuries. Field trips are planned to mill towns and industrial cities.

HI 914 The Gilded Age: 1865-1900
A depiction of the period when America went through a rapid socio-economic transformation in the areas of industrialization, urbanization, and immigration.

HI 916 Revolution in the Twentieth Century
After examining a number of theories regarding Revolutionary Developments this course will focus upon the major revolutions of the present century; i.e., Russian, Chinese, Nazi, Cuban and Mexican.

HI 918 The US and the Middle East

Discusses growth of US economic, cultural, political, and strategic interests in Middle East; emphasis on post-World War II period.

HI 920 Japan in the Twentieth Century

An evaluation of the role of Japan as an emerging world power and economic giant during the present century.

HI 922 US & Soviet Relations

A study of the central issues in American-Soviet relations since 1917. Special attention will be devoted to the question of recognition, the origins of the Cold War, the Cuban Missile Crisis, and recent developments.

HI 924 Selected Topics in US-East Asian Relations

An examination of major problems affecting American foreign policy in East Asia since World War II; i.e., the origins of the Cold War in Asia, America's entry into the Korean War, the Offshore Islands issue, America's involvement in the Vietnam conflict, and US-Chinese relations.

HI 946 European Intellectual History from the Enlightenment to the Present

The major ideas of the era; utilitarian, nationalist, and socialist schools; fascism, communism and liberalism.

HI 952 Russia in the Twentieth Century

An evaluation of major political economic, and diplomatic developments in the Soviet Union, stressing Leninism, Stalinism, and Khruschevism.

HI 953 The Mind of Modern Russia

An analysis of the central attitudes and ideas that have shaped the Russian mind from the Muscovite era to the present.

HI 970 China in the Twentieth Century

A consideration of the major political, diplomatic, and intellectual developments in China since 1949.

HI 992 Seminar on American Constitutional History

Varied topics to meet the student's needs; e.g., the Marshall Court, Taney Court, Warren-Burger Courts, etc.

Mathematics

Undergraduate Courses

MA 099 Developmental Mathematics

Whole numbers, fractions, decimals, ratio, proportion, percent, applications, use of the calculator, metric/English systems of measurement, geometry will be included. Three institutional credits. (Not counted toward graduation.)
Category 3.

MA 100 Basic Mathematics

Provides the student who has little or no background in mathematics with the necessary arithmetic and algebra for the understanding of today's mathematics.
Category 1.

MA 110 College Algebra

Properties of the real number system based upon set-theoretical foundations: linear, quadratic, and simultaneous equations, inequalities, absolute value, complex numbers, determinants, induction.
Category 1.

MA 120 College Trigonometry

Plane trigonometry required for the study of calculus; trigonometry of the general angle, the use of logarithms, solution of right triangles, radian measure, identities, and other topics.
Category 1.

MA 130 Modern Mathematics for Elementary Majors

Mathematical concepts needed to teach the new approaches found in modern arithmetic textbooks, prepares prospective teachers of mathematics. Non-credit for math majors.
Category 1.

MA 131 Modern Geometry for Elementary Majors

Geometric concepts from an intuitive point of view; measurement of length and angles, closed curves, circles, mathematical constructions, congruent sets of points, area of plane regions, and graphs. Non-credit for math majors.
Category 3.

MA 140 Problem Solving

Develops skill in translating word problems into mathematical language, types of problems and basic relationships are discussed.
Category 1. 1 credit.

MA 160 Survey of Mathematics I

Topics to convey an appreciation of mathematics such as logic, set theory, probability, statistics, etc.
Category 3.

MA 161 Survey of Mathematics II

Topics to convey an appreciation of mathematics such as algebra, geometry, number theory, and others.
Category 3.

MA 165 Business Math

Topics include checking accounts, payroll, simple interest, notes, discount, consumer interest, financial statements, retailing and investments.
Category 3.

MA 170 Analytic Geometry

Essential classical topics of analytical geometry: graphs and their uses and applications to empirical curve fitting.
Category 1.

MA 200 Calculus I

Prerequisite: Trigonometry or MA 120

Rate of change of a function; limits, derivatives of algebraic functions, and application of the derivative; integration of algebraic functions, trigonometric functions and applications.
Category 1. 4 credits.

MA 201 Calculus II

Prerequisite: MA 200

Continuation of MA 200; integration, applications of the definite integral, transcendental functions and methods of integration, indeterminate forms, and infinite series.
Category 1. 4 credits.

MA 202 Calculus I for Management

Prerequisite: MA 110

Rate of change of a function, limits, derivatives of algebraic functions; applications of the derivative with emphasis on business applications.
Category 1. 4 credits.

MA 203 Calculus II for Management

Prerequisite: MA 202

Continuation of MA 202, integration: applications of the integral with emphasis on business applications.
Category 3. 4 credits.

MA 220 Discrete Mathematics I

Focuses on the mathematics of computer science. Topics to be covered are mathematical logic, including switching circuits, set theory, and mathematical induction.
Category 1.

MA 250 Introduction to Statistics I

Probability and basic statistical techniques and decision-making as they are applied to data.
Category 1.

MA 251 Introduction to Statistics II

Prerequisite: MA 250 or equivalent or consent of instructor

Continuation of MA 250; including regression, correlation, Chi-square and contingency tables, analysis of variance and sampling techniques; computers may be employed.
Category 1.

MA 305 Abstract Algebra
Prerequisite: MA 220

Fundamental concepts of sets, mathematical systems, groups, rings, and fields.
Category 3.

MA 310 Calculus III
Prerequisite: MA 201

Continuation of MA 201: vectors, partial differentiation, multiple integration, and line integrals.
Category 1. 4 credits.

MA 320 Ordinary Differential Equations
Prerequisite: MA 310 (may be taken concurrently)

Theory and application of ordinary differential equations of the first and second orders, with linear constant-coefficient type, partial differential equations.
Category 2.

MA 321 Discrete Mathematics II
Prerequisite: MA 220

Continuation of MA 220. Topics include partially ordered sets, lattices, and Boolean algebra.
Category 1.

MA 325 Introduction to Quantitative Methods
Prerequisite: MA 220

Basic probability and statistics, mathematics of finance, linear programming simplex method, replacement problems, queuing theory, elementary game theory, inventory control models.
Category 2.

MA 330 Linear Algebra
Prerequisite: MA 201

Solutions of simultaneous equations by means of matrices and determinants; properties of vector spaces, linear transformations, characteristic values, bilinear and quadratic forms.
Category 2.

MA 334 Statics
Prerequisites: PY 121 and MA 310

Emphasis upon mathematical and physical formulation of principles underlying the solution of engineering problems; vector algebra; equilibrium; centroids and moments of inertia.
Category 3.

MA 336 Dynamics
Prerequisite: MA 334

Rectilinear and curvilinear motion of a particle, relative motion, harmonic motion, variable velocities and accelerations, the work-energy principle, impulse and momentum.
Category 3.

MA 338 Surveying
Prerequisite: MA 120 or equivalent

Use, care, and adjustment of surveying instruments, boundary surveys, horizontal and vertical curves, earthwork, and topography, field and laboratory work along with lectures.
Category 3.

MA 340 Modern Geometry I
Prerequisite: Completion of freshman year

Axiomatic geometry with emphasis on Euclidean geometries: non-Euclidean geometries; principle of duality; Desargues', Pascal's, and Brianchon's theorems, harmonic sets and divisions, cross ratio and others.
Category 2.

MA 341 Modern Geometry II
Prerequisite: MA 340

Continuation of Modern Geometry I with topics from projective geometry.
Category 3.

MA 350 History of Mathematics
Prerequisite: Completion of freshman year

Surveys the developments of algebra, arithmetic, plane geometry and trigonometry by tracing certain fundamental concepts in mathematics; from Euclid to the twentieth century.
Category 2.

MA 360 Number Theory
Prerequisite: MA 220 or MA 130

Theory of numbers, divisibility properties of integers, prime numbers, the Euclidean algorithm, the unique factorization theorem, congruences. Diophantine equations, quadratic reciprocity, number theoretic functions.
Category 2.

MA 370 Introduction to Actuarial Science
Prerequisite: MA 201

Mathematical theory of compound interest with applications to the solution of interest problems.
Category 3.

MA 375 Life Contingencies
Prerequisite: MA 370

A survey of the fundamental principles of life contingencies with applications to American life insurance practice.
Category 3.

MA 376 Combinatorial Mathematics
Prerequisite: MA 220

Topics include general counting methods, recurrence relations, elements of graph theory, trees and search.
Category 3.

MA 380 Probability
Prerequisite: MA 310

Methods for interpreting results of experiments; distributions, probability, random variables, binomial probability, normal probability.
Category 3.

MA 381 Mathematical Statistics
Prerequisite: MA 380

Sequel to MA 380; sampling distribution, point and interval estimation, tests of hypotheses, regression, and correlation, analysis of variance, decision theory.
Category 3.

MA 401 Ring Theory
Prerequisite: MA 305

Isomorphism theorems; integral domains and fields; maximal, prime and primary ideals; divisibility theory; polynomial rings, radicals; direct sums.
Category 3.

MA 410 Advanced Calculus I
Prerequisite: MA 310

Elementary topology; definition and properties of functions; rigorous treatment of integration; Taylor's theorem; infinite series and power series.
Category 2.

MA 411 Advanced Calculus II
Prerequisite: MA 410

Continuation of MA 410; functions of several variables; introduction to different geometry, differential forms; theorems of Gauss, Green, and Stokes; Lebesque integration may be included.
Category 2.

MA 425 An Introduction to Partial Differential Equations
Prerequisite: MA 320 or equivalent

Solutions and techniques regarding partial differential equations for math and science students.
Category 3.

MA 430 Topology
Prerequisites: MA 310, MA 220

Algebra of sets; cardinal and ordinal numbers; topological spaces; connectedness, compactness, and continuity; separation and countability; axioms, metric spaces; complete metric spaces; product spaces; function and quotient spaces.
Category 3.

MA 440 Introduction to Numerical Analysis
Prerequisite: MA 310 or consent of instructor

Methods for solutions of equations, for physics and mathematics majors or minors and computer science students; a laboratory session in conjunction with the lectures with some computing devices and techniques.
Category 1.

MA 441 Numerical Methods
Prerequisite: MA 440

Numerical methods for solving differential equations in electrical, mechanical, chemical, biological, and other physical problems; a laboratory session in conjunction with the lectures with some computing devices and techniques.
Category 3.

MA 450 Complex Variables
Prerequisite: MA 310

Theory of functions of complex variables; complex numbers, functions, limits and continuity, differentiation, Cauchy-Riemann Equations, Cauchy's Theorem, Taylor and Laurent series, residues and poles.
Category 3.

MA 460 Operations Research
Prerequisite: MA 310

Topics include formulation of linear optimization model, algebraic and geometric representation, simplex method, dynamic optimization models, probabilistic dynamic programming.
Category 3.

MA 498 Internship
Prerequisite: Consent of instructor

Working in and for an organization where one's skills can be tested in real situations. The purposes: opportunity to gain experience; to increase one's knowledge in various functional areas; and to establish important contacts with an organization.
Category 1. 1-6 credits.

MA 499 Independent Study
Prerequisite: Consent of instructor

Offers advanced students an opportunity to examine topics not normally taught in other math or computer courses. Geared to interests of both the student and the instructor.
Category 1. 1-3 credits.

Graduate Courses

MA 900 Statistical Techniques for Business, Liberal Arts, Nursing and the Sciences

Not to be taken for credit by students in the Master's Program
Statistical methods and decision methods as they are applied to data. Testing of hypotheses, sampling, nonparametric methods, regression, correlations, analysis of variance, time series, etc. Computer programming may be used.

MA 904 Applied Mathematics I

Overview of the major ares of applied mathematics. Topics include symmetric linear systems, equilibrium equations, equilibrium equations in the continuous case and analytical methods.

MA 906 Numerical Methods I

Algorithms from various areas of mathematics will be investigated. The computer will be used extensively as a tool in finding numerical solutions using these algorithms.

MA 908 Analysis I

Prerequisite: MA 310

Topics include elementary topology, continuity, differentiation, integration, infinite series, as well as other topics as time permits.

MA 910 Applied Mathematics II

Prerequisite: MA 904

Topics to be covered are numerical methods, initial value problems, network flows and combinatorics, and optimization.

MA 912 Numerical Methods II

Prerequisite: MA 906

Continuation of MA 906.

MA 914 Analysis II

Prerequisite: MA 908

A continuation of Analysis I. Topics will include: theorems of Green, Stokes, and Gauss, infinite series. Lebesque integration, and other topics as time allows.

MA 916 Probability

Prerequisite: MA 310 or equivalent

Probability, combinatorial methods, random variables, probability functions, moments, moment generating functions, central limit theorem, sampling.

MA 918 Mathematical Statistics

Prerequisite: MA 916 or equivalent

Decision theory, estimation, hypothesis testing, regression and correlation, analysis of variance.

MA 920 Linear Algebra

Prerequisite: MA 220 or equivalent

Fundamental concepts of systems of linear equations, matrices, vector spaces, linear transformations, determinants, inner products, eigenvalues, and eigenvectors.

MA 925 Number Theory

Prerequisite: MA 220 or equivalent

Includes divisibility, primes, congruence, primitive roots, and quadratic residues.

MA 930 Theory of Interest

Prerequisite: MA 310

Mathematical theory and applications of compound interest; interest discount, present value, force of interest, annuities, amortization schedules, sinking funds, bonds, miscellaneous topics.

MA 940 Life Contingencies

Prerequisites: MA 916, MA 918, MA 930

Applications of probability and the theory of compound interest in the mathematics of life insurance mortality, premiums, reserves, benefits.

MA 950 Multiple Regression

Applications of techniques of multiple regression to the statistical analysis of problems. Relations, correlations, simple linear regression, multiple regression with two independent variables, general multiple regression.

MA 960 Partial Differential Equations

Prerequisite: MA 320

Classification of partial differential equations; the theory of first-order linear partial differential equations with constant coefficients; existence and uniqueness theorems with mixed boundary value problems.

MA 970 Numerical Analysis of Differential Equations

Prerequisite: MA 320

Finite difference approximations applied to differential equations including the study of stability and convergence. Relaxation, gradient, and characteristics methods will also be studied.

MA 975 Abstract Algebra

Prerequisite: MA 920

Elementary properties of groups, rings, integral domains, and fields. Groups through Sylow theory and (1) field theory through Galois theory (2) ring theory through primary decomposition or (3) linear algebra through Jordan canonical forms.

Media

Undergraduate Courses

ME 100 Introduction to Mass Communications

An integrated examination of the history, theory, structure, process, and effects of each of the mass media.
Category 1.

ME 103 Survey of Radio and Television

Perspectives on the development of radio and television technologies, programming, regulation, and economic support, and their impact.
Category 1.

ME 106 Fundamentals of Library Use

Understanding the organization and use of a college library to develop skills for course-related library research.
Category 3.

ME 110 Speech

Essentials of speech production and speech writing for large and small groups. Classroom practice in delivering various types of speeches.
Category 1.

ME 125 History of Communication Technology

Traces history of communications media from pictographic writing through the development of mass media and the latest media delivery systems.
Category 1.

ME 135 Oral Interpretation of Literature

Techniques of reading aloud and staging non-dramatic literature; e.g., short stories, poetry, etc. The student analyzes selections and then performs them in class.
Category 1.

ME 137 History of the Theatre

The history and interrelated development of film, television, theatre, and radio from their beginnings to the present.
Category 2.

ME 140 Audiovisual Equipment and Materials

Selection and use of major types of audiovisual equipment and their software.
Category 1.

ME 150 Introduction to Photography

Covers the basic theory and practice of 35mm B/W photography, including camera handling, film processing, light meters, printing and picture content.
Category 1.

ME 190 American Entertainment

The history and nature of live and electronic performances from the Colonial period through the present. Television, film, theatre, and radio are covered.
Category 1.

ME 191 Introduction to the Theatre

An overview of live performance, with the emphasis on audience appreciation. Performance arts and crafts are examined.
Category 1.

ME 192 Creative Dramatics

Principles and techniques of leading improvised dramatic activity, particularly with children. Involves sensory awareness, imagination, movement, and story dramatizations.
Category 3

ME 193 Storytelling

Presenting poetry and prose orally to children. Introductory and follow-up techniques. In-class and field practice.
Category 3

ME 199 Interpersonal Communications in Media

Study of the communications process as it relates to the production of material in various media, including video, audio, film.
Category 1.

ME 201 Sources of Media Information

Study of the most important sources of information in media; students will use the Learning Resources Center for solving problems.
Category 1.

ME 205 Telecommunications

Prerequisite: ME 103 or ME 125

Examines the technologies used for capturing, storing, and transmitting data, voice, and images in both business and mass media applications.
Category 2.

ME 215 Speech for the Performer

Prerequisites: ME 110 and ME 135

Stresses creative and flexible use of voice for the media professional. Practice in vocal quality, articulation, interpretation, accents, and dialects.
Category 2.

ME 220 Principles of Graphic Communication

Language and design of graphic communication; psychological principles of visual arts; interpretation of graphics in advertising, training, and information dissemination.
Category 2.

ME 225 Musical Theatre

The history and nature of popular musical theatre. The uniqueness of musical theatre as an art form is emphasized.
Category 2.

ME 231 Intermediate Photography
Prerequisite: ME 150 or consent of instructor

Expands basic skills in camera craft, film, and print processing and presentation. Instruction and practice in the Zone System, theory and practice of advanced exposure and film development control. Emphasis on photographic composition and efficiency in designing purposeful photographic statements.
Category 1.

ME 236 Lighting for Media
Prerequisite: ME 100 or consent of instructor

A study of how light is applied and controlled in performances, video and film production, and photography. Offered in a lecture and demonstration format, the course surveys the basic concerns of light and lighting.
Category 2.

ME 240 Elements of Screen Language

The grammar of screen images in film and television; use of frame, point-of-view, light, shadow, juxtaposition, color, and transition devices.
Category 3.

ME 241 The Art of the Motion Picture

Aesthetic and theoretical dimensions of the motion picture from Citizen Kane and neorealism (1941) to the present.
Category 3.

ME 242 Basic 8MM Film Production

Experience in making motion pictures of rudimentary level with or without sound tape accompaniment; critiques of student work.
Category 2.

ME 243 Introduction to Film Animation

Using Super 8mm motion picture format, students will plan and produce an animated film employing basic art techniques and graphics.
Category 2.

ME 244 Media Graphics

Creating visual instructional media; applying lettering, graphics, and display techniques; end products include visuals for projected and non-projected use.
Category 1.

ME 245 Acting for Stage and Screen I
Prerequisite: ME 135 or consent of instructor

Basic acting theory and practice. Students present brief monologues and scenes both on stage and before the camera.
Category 2.

ME 246 Acting for Stage and Screen II
Prerequisite: ME 135, ME 245 or consent of instructor

Further development of basic acting skills for stage and screen through scene study. Some work may be done in cooperation with directing students.
Category 3.

ME 249 History of the Motion Picture

The history and development of the motion picture from Edison and Lumiere (1895) to Welles (1941).
Category 3.

ME 250 Classroom Use of Radio and Television

Study of the use of radio and television as instructional media; exploring the adaptation of these media to instructional situations.
Category 3.

ME 255 Designing Instructional Media Modules

Prerequisite: ME 100

A systems approach to the design of instructional media with an emphasis on the development of computer-managed interactive video.
Category 2.

ME 260 Videotape Recording

Prerequisite: ME 100 or consent of instructor

A beginning course in video program production, using lightweight and portable equipment.
Category 1.

ME 263 Visual Media Design

Prerequisite: ME 100 or consent of instructor

An introduction to principles affecting image design, to elements of design and visual perception, and their application in various media.
Category 1.

ME 275 Scenecraft for Stage and Screen

Prerequisite: ME 100 or consent of instructor

The design and construction of sets and scenery, the basics of special effects, stage and studio facilities, and facility organization and use. The roles and responsibilities of behind-the-scene personnel. Applications for film, theatre, and television.
Category 3.

ME 276 Costume and Makeup for Performance

Basics of historical research and design, applicable to both stage and screen work. Practicum in constructing costumes and applying makeup.
Category 3.

ME 280 Staging Media Performances I

Prerequisite: ME 191, ME 245, or consent of instructor

Script selection, casting, scene analysis, and other directorial concerns. Application to film, theatre, and television.
Category 3.

ME 281 Staging Media Performances II

Prerequisite: ME 280

A continuation of ME 280. Advanced theoretical and practical problems facing the director. Applications for all media.
Category 3.

ME 290 Theatre for Children

Organization of children's theatre, script selection, and visual design. Alternate performance spaces such as classrooms and parks emphasized.
Category 3.

ME 301 Communication Theory

Prerequisite: ME 100

Examines the nature and origins of symbol systems, the make up of audiences, the effects of mass media, and concomitant research.
Category 3.

ME 321 Rehearsal and Performance

Prerequisite: ME 100

Public performance of full-length stage productions under faculty direction. Students assume performance and/or production "roles" as described in departmental manual.
Category 1.

ME 324 Theatre in the Classroom
Prerequisite: Admission by interview and/or audition

Touring plays to elementary and secondary classrooms. Acting, directing, designing and managerial responsibilities according to students' demonstrated abilities.
Category 3.

ME 347 Producing Slide and Sound Programs
Prerequisite: ME 150 or consent of instructor

Planning and producing slide programs with music and narration; techniques of storyboarding, copying, and synchronizing audio with visual materials.
Category 2.

ME 348 Producing and Directing Audio Programs
Prerequisite: ME 100

Writing, selecting and recording sound, and assembling audio programs; radio production; use of portable and studio equipment; critiques of student programs.
Category 2.

ME 359 Television Production
Prerequisite: ME 100 or consent of instructor

Basics of studio production including visualization and sequencing of short scripts, sound, graphics, lighting, and technical direction.
Category 2.

ME 361 Elements of Closed Circuit Television
Theory and practice in the use of closed circuit television, including teleconferencing, cable, and Instructional Television Fixed Service.
Category 2.

ME 365 Advanced Photography
Prerequisite: ME 150, ME 231, or consent of instructor

Techniques used in expressive and applied photography including the study and control of density formation, lighting, and visual problem solving.
Category 2.

ME 366 Writing for Television and Radio
Prerequisite: ME 359 or consent of instructor

Creating scripted material for the electronic media. All types, styles, and formats will be covered.
Category 2.

ME 367 Photojournalism
Prerequisite: ME 150, ME 231, or consent of instructor

The theory and practice of narrative photography applicable to daily news, feature story, and commercial journalism.
Category 2.

ME 370 Media Advertising and Publicity
Prerequisite: ME 100

The basics of creating, preparing, and disseminating advertising and publicity materials through the media. Print and non-print channels are covered.
Category 2.

ME 371 Corporate Video
Prerequisite: ME 366

An examination of the principles, planning and production of audio/video materials specifically designed for training and instructional purposes.
Category 3.

ME 373 Mediated Graphic Design I
Prerequisite: ME 244

Introduction to using practical techniques and tools to create graphic design images through the use of computerized media.
Category 3.

ME 375 Producing Media Performances
Prerequisite: ME 100 or consent of instructor

Organization and administration of performance production companies and events; applications for television, film, theatre, and radio.
Category 3.

ME 384 Media Criticism
Prerequisite: ME 100 or consent of instructor

Evaluation and analysis of film, television, theatre, and radio performances, development of intelligent, ethical standards of judgment.
Category 2.

ME 386 Playwriting for Stage and Screen
Prerequisite: ME 100 or consent of instructor

Creating fictional dramatic material for television, film, and radio. Completion of a short script is required.
Category 3.

ME 396 Advanced Video Production and Editing
Prerequisite: ME 366

Students will work with program types, preprogram analysis, feasibility, logistics, scheduling, equipment inventory, program taping, post production, and program presentation.
Category 2.

ME 404 Independent Study in Media
Prerequisite: ME 100 or consent of instructor

Permits advanced students to investigate topic of special interest through research or production of a project. Periodic consultations with advisor.
Category 1.

ME 410 Special Topics in Performance
Prerequisite: Completion of sophomore year

The in-depth examination of an area of interest in film, television, theatre, or radio. One-time only subjects, not covered in other departmental offerings.
Category 3.

ME 435 Media Internship
Prerequisite: Two relevant media courses and consent of department

Provides opportunity to advanced students to increase experience through internship with sponsoring community organization, institution, or business under appropriate supervision.
Category 1.

Graduate Courses

ME 910 Communication Media

Intended to provide an integrating framework to assist the student's understanding of the relationships among the various concepts in the field. Includes reading and summarizing reports from the research literature.

ME 930 Theories of Communication
Prerequisite: ME 910

A survey of research on theory of the processes of personal and group communication.

ME 970 Computer-Assisted Library Service

Provides the background needed by the modern librarian who must plan and implement automated library systems.

ME 971 Library Networks and Teleprocessing

The role of the time-shared computer in furthering library networks and sub-networks; non-computer-related activities of networks.

ME 991 Media Internship

Prerequisites: Advanced standing and demonstrated competence in the appropriate area

Provides opportunity to advanced students to increase experience through internship with sponsoring community organization, institution, or business under appropriate supervision.

ME 992 Directed Studies in Media

Prerequisite: Consent of faculty advisor

Permits advanced students to investigate topics of special interest through research or production of a project. Periodic consultations with advisor.
3-6 credits.

Music

MU 100 Music Fundamentals

Basic knowledge and theory of notation, major and minor scales, intervals, rhythms, and chords.
Category 2.

MU 105 Instrumental Music and Theory

Study and experience in music notation and style of instrumental music. Participation in college band required.
Category 1.

MU 115 Music Appreciation

A general survey of masterpieces of the major composers of various periods in the history of music.
Category 1.

MU 125 Music History

A survey of music history from the Medieval to the Romantic period.
Category 3.

MU 130 Music of the Baroque Period

The period 1600-1750 with emphasis on Bach and Handel.
Category 3.

MU 135 Music of the Classical Period

The period 1750-1827; Haydn, Mozart and Beethoven.
Category 3.

MU 140 Music of the Romantic Period

A survey of nineteenth-century music beginning with Beethoven.
Category 2.

MU 150 Opera

Analysis of the masterworks of the standard operatic repertoire.
Category 1.

MU 170 Chamber Music
A survey of chamber music beginning with the classical period.
Category 3.

MU 175 Music in America
A survey of music history and literature in America including gospel spirituals, jazz, popular and classical music.
Category 3.

MU 180 Form and Analysis
An introduction to and analysis of the formal structures of music.
Category 3.

MU 205 Harmony I
Prerequisite: MU 100 or consent of instructor

Harmonization of melodies; basic chord structures, ear-training, harmonic analysis, inversions, non-harmonic tones, figured bass.
Category 3.

MU 210 Harmony II
Prerequisite: MU 205 or consent of instructor

Harmonization of melodies using primary and secondary chords, harmonic analysis, ear-training, secondary dominants and modulation.
Category 3.

MU 215 Chorus and Music Theory
Prerequisite: Audition required

Mixed choral repertoire and performance, covering vocal problems and techniques. Introduction to music theory, rhythms, intervals, basic chordal structures, harmonization. Participation in college chorus required.
Category 1.

MU 220 Chorus
Prerequisite: MU 215

Mixed chorus repertoire. May be repeated.
Category 1. 1 credit.

MU 225 Band
Prerequisite: Audition required

Study and experience in repertoire and performance. May be repeated.
Category 1. 1 credit.

MU 230 Orchestra
Prerequisite: Audition required

Study of symphonic repertoire; techniques of orchestral performance.
Category 1. 1 credit.

MU 237 Music in the Elementary School
Guiding growth in rhythmic, notational, and listening experiences. Survey of music books and materials.
Category 3.

MU 245 Twentieth-Century Music
A comprehensive study and general listener's approach to contemporary music beginning with impressionism.
Category 2.

MU 255 The Golden Era of Piano Music

A survey of piano music beginning with Beethoven and continuing through the Romantic tradition to the early twentieth century.
Category 2.

MU 260 Symphonic Music

A survey of symphonic music beginning with the classical period.
Category 2.

MU 265 The Concerto

The concerto from the eighteenth to the twentieth century with emphasis on the development of the piano concerto.
Category 2.

MU 400 Independent Study in Music

Prerequisite: Consent of instructor

An opportunity for further study in a special field of interest under faculty supervision.
Category 1.

Natural Science

Undergraduate Courses

NS 101 Physical Science I

Survey of physics and chemistry; evolution of concepts and theories: measurement, gravitation, energy, conservation laws, kinetic molecular theory, and wave motion. Two hours lecture and two hours laboratory per week.
Category 1.

NS 102 Physical Science II

Light, electricity, magnetism, fundamentals of chemistry, atoms and molecules, the structure of atoms, quantum theory, and relativity. Two hours lecture and two hours laboratory per week.
Category 1.

NS 105 Introduction to Astronomy

The tools of the astronomer, the nature of celestial space; star locations, motions, nature, and evolution; the universe; three lectures per week.
Category 1.

NS 109 Fundamentals of Laboratory Technique

Familiarization with some of the simple equipment and operations employed in making measurements in the physical sciences.
Category 3.

NS 110 Energy in the Modern World

Interdisciplinary course examining the relation of energy and technology to living systems, community and urban life, and current social policy.
Category 1.

NS 201 Science and Society

Science examined in an historical and social context; the impact of science on man's interpretation of the natural world. For non-science majors.
Category 1.

NS 260 Energy Conservation and Management

Examination of methods to conserve and manage existing and alternate energy systems and preparation of energy management plans.
Category 2.

NS 261 Energy Applications and Techniques

Energy-measurement techniques are applied to components of energy conservation and solar conversion systems with student ingenuity encouraged.
Category 2.

NS 262 Fundamentals of Solar Energy

Analysis of the major concepts and systems for collection, storage, and distribution of solar energy via a problem-solving approach.
Category 2.

NS/BI 315 Neuroanatomy and Physiology

Prerequisites: BI 161, BI 162

The structural and functional organization of the central and peripheral nervous system. Principles of normal and abnormal transmission, integration and storage of information in neuronal pathways.
Category 1. 4 credits.

NS 340 Energy Construction Methods and Techniques

Prerequisite: NS 260

Drafting and model-making skills needed for site and building planning and construction detailing as related to energy systems.
Category 2.

NS 342 Shelter Design and Alternative Energy

Prerequisites: NS 260 and 340

The process of design in planning shelter and alternative energy systems appropriate to the solution of student-selected design problems.
Category 3

NS 346 Design and Operation of Solarspaces and Greenhouses

Prerequisites: NS 260 and NS 261

Stress will be on passive solar design together with conditions for human comfort, plant growth, and impact on attached space.
Category 3

NS 348 Computer and Calculator Application to Energy Studies

Prerequisites: CS 111 or equivalent and NS 260

Application of computer programming to energy system design, engineering, and economics utilizing individual programs as well as available software.
Category 3

NS 349 Energy Implications of Forestry and Land Management

Prerequisites: BI 151 and NS 260

Principles and practices of forest silviculture and woodlot management with emphasis on energy forms. Students will develop original management plans.
Category 3

NS 400 Natural Science Seminar

Prerequisite: Consent of department

Contemporary developments in the natural sciences; technical literature, independent projects or studies, and the preparation and presentation of technical papers.
Category 1.

NS 410 Independent Studies in Natural Science

Prerequisites: 24 credits in science, 4 courses in one science, and consent of the department

Opportunity for advanced students to pursue a topic of special interest involving extensive reading, experimentation, and research.
Category 1.

Graduate Courses

NS 905 Man's Environment: The Oceans

Geography of the sea, physical, and chemical properties, the ocean environment, the dynamic integration of land, sea, and air, and the contaminated ocean.

NS 910 Ecology of Cape Cod

Field experience course to study dynamics of Cape Cod ecosystems, patterns of development, diversity and stability.

NS 915 Tropical Ecology

Field experience course to study the dynamics of tropical ecosystems, and their patterns of development, diversity and stability.

NS 940 Independent Study in Natural Science

An intensive study review of the scientific literature on a topic approved by the major professor with a research project or laboratory work (practicum).

NS 950 Special Topics in Natural Science

Stresses the literature, experimentation, observation, and collection of data in field and laboratory. One time only topics not covered in regular department offerings.

Nursing

NU 100 Humanism in Health Care

Perception of health, viewed from the perspective of climate/person. Models of health care are explored.
Category 3.

NU 200 Introduction to Professional Nursing I

Prerequisite: Acceptance into Nursing Major

Traces the development of professional nursing as it relates to the climate in interaction with the person and professional.
Category 1. 2 credits.

NU 210 Introduction to Professional Nursing II

Prerequisite: NU 200

Introduces nursing process as it relates to health needs of clients and environment. Beginning assessment competencies comprise the clinical practicum.
Category 1. 2 credits.

NU 220 Current Concepts in Gerontological Nursing

Introduces the student to complex phenomenon that impact on the elderly population. Includes demographics, psychosocial issues, economic, political, and ethical issues.
Category 3.

NU 300 Introduction to Nursing Science

Prerequisites: NU 200 and NU 210

Focuses on economic, environmental, ethical, legal, and political factors influencing the delivery of professional nursing care.
Category 1.

NU 310 Nursing Science I

Prerequisite: NU 300 - plus all previously noted prerequisites

Focuses on biopsychosocial variables across the life span. Clinical learning occurs in nursing laboratory and selected settings.
Category 1. 8 credits.

NU 315 Group Communication Seminar I

Prerequisite: NU 210 plus all previously noted prerequisites

Provides the opportunity to experience group process by interacting with peers.
Category 1. 1 credit.

NU 330 Introduction to Professional Nursing III
Prerequisite: Acceptance into Nursing major

Examines professional nursing as a theoretical discipline influenced by a complex internal and external climate.
Category 1. 4 credits.

NU 340 Nursing Science II
Prerequisite: NU 310

Concepts of wellness, Disease, and health behavior are examined as the nursing process is operationalized.
Category 1. 8 credits.

NU 415 Group Communication Seminar II
Prerequisite: NU 310 plus all previously noted prerequisites

The independent and interdependent nursing functions of various health care providers are explored within the group setting.
Category 1. 1 credit.

NU 430 Research Seminar
Prerequisite: NU 340 plus all previously noted prerequisites

Focuses on the definition and analysis of phenomena through scientific inquiry.
Category 1. 3 credits.

NU 440 Nursing Science III
Prerequisite: NU 340

Multiple variables are examined and manipulated by means of the nursing process.
Category 1. 8 credits.

NU 445 Group Communication Seminar III
Prerequisite: NU 415 plus all previously noted prerequisites

The role of the professional nurse in decision making relating to the delivery of health care is explored.
Category 1. 1 credit.

NU 450 Leadership in Nursing
Prerequisite: NU 440

Selected theories and strategies of leadership and management are examined.
Category 1.

NU 460 Nursing Science IV
Prerequisite: NU 440

Opportunities for students to examine and manipulate multiple and complex variables by means of the nursing process.
Category 1. 8 credits.

NU 480 Independent Study
Prerequisite: Consent of Department

Opportunities for students to engage in special studies in nursing according to individual interests and faculty availability.
Category 1. 1-4 credits.

Occupational Therapy

OT 100 Introduction to Occupational Therapy

An introductory survey of occupational therapy: history, theory, literature, terminology, areas of practice, interdisciplinary relationships, current trends, and future directions.
Category 1.

OT 200 Occupational Therapy Intervention Techniques: Media I

Prerequisite: OT 100

An introduction to the use of activities as therapeutic media in occupational therapy. Activity procedures, equipment, supplies, teaching methods, activity adaptation, and application to clinical situations; leather and ceramics.
Category 1.

OT 201 Occupational Therapy Intervention Techniques: Media II

Prerequisite: OT 100

A continuation of the exploration of activities as therapeutic media. Procedures, equipment, supplies, teaching methods, activity adaptation and analysis, and adaptation to clinical situations; wood and fibers.
Category 1.

OT 230 Communication and Group Process in Occupational Therapy

Prerequisite: OT 100

A survey of theories of communication and group process and their application to occupational therapy. Therapeutic uses of the individual, dyads, and groups.
Category 1.

THE FOLLOWING COURSES ARE OPEN ONLY TO STUDENTS WHO HAVE BEEN ACCEPTED INTO THE OCCUPATIONAL THERAPY PROGRAM.

OT 303 Human Performance, Occupation, and the Activity Process

Prerequisites: OT 200, OT 201

Investigation and application of theories basic to occupational therapy practice, including those related to human performance, occupation, adaptation, and the therapeutic use of purposeful activity.
Category 1.

OT 305 Health and Illness: Physiological
Prerequisite: OT 100

Concepts of health and illness; methods of physiological health promotion and protection; characteristics and psychosocial implications of physiological conditions encountered in occupational therapy practice.
Category 1.

OT 310 Occupational Therapy Methods with Developmental Problems I
Prerequisites: OT 200, OT 201, NS/BI 315; to be taken concurrently with OT 311

Theories and techniques of assessment and intervention with problems of development affecting sensorimotor, cognitive, and psychosocial function in neonatal to adolescent populations.
Category 1.

OT 311 Practicum in Developmental Problems I
Prerequisite: To be taken concurrently with OT 310

Supervised clinical observation and participation in assessment and intervention approaches to developmental problems in the neonatal through adolescent age group.
Category 1. 1 credit.

OT 312 Occupational Therapy Methods with Developmental Problems I (Accelerated)
Prerequisite: NS/BI 315

An accelerated course in occupational therapy approaches to developmental problems in neonatal to adolescent populations. Structured specifically for the student with an associate's degree in occupational therapy. Includes practicum.
Category 1. 2 credits.

OT 315 Health and Illness: Psychosocial
Prerequisite: OT 100

Concepts of psychosocial health and illness; the role of occupational therapy in the promotion of psychosocial health; characteristics of psychosocial diagnoses commonly encountered in occupational therapy.
Category 1.

OT 320 Occupational Therapy Methods with Developmental Problems II
Prerequisites: OT 310, OT 311; to be taken concurrently with OT 321

Theories and techniques of assessment and intervention with problems of development affecting sensorimotor, cognitive, and psychosocial function in young adult through elder populations.
Category 1.

OT 321 Practicum in Developmental Problems II
Prerequisites: OT 310, OT 311; to be taken concurrently with OT 320

Supervised clinical observation and participation in evaluation and intervention approaches to adult developmental problems.
Category 1. 1 credit.

OT 325 Occupational Therapy Methods with Developmental Problems II (Accelerated)
Prerequisite: OT 312

An accelerated course in occupational therapy approaches to developmental problems in young adult through elder populations. Structured specifically for students with an associate's degree in occupational therapy. Includes practicum.
Category 1. 2 credits.

OT 405 Methods of Occupational Therapy Practice with Physiological Diagnoses
Prerequisites: OT 303, OT 305, OT 320, OT 321, NS/BI 315; to be taken concurrently with OT 406

Techniques of therapeutic intervention, adaptation, health maintenance, and prevention of dysfunction applied to physiological diagnoses. Includes methods of assessment, treatment planning, implementation, and documentation.
Category 1.

OT 406 Practicum in Occupational Therapy with Physiological Diagnoses

Prerequisite: To be taken concurrently with OT 405

Directed observation and participation in the clinical application of theories and methods of occupational therapy intervention with physiological diagnoses.
Category 1. 1 credit.

OT 407 Occupational Therapy Methods with Physiological Diagnoses (Accelerated)

Prerequisites: OT 312, OT 325

An accelerated course in occupational therapy assessment and treatment, approaches with physiological diagnoses. Structured specifically for the student with an associate's degree in occupational therapy. Includes practicum.
Category 1. 2 credits.

OT 410 Organization and Administration of Occupational Therapy Services

Prerequisites: OT 320, OT 321, or OT 325

Introduction to principles of organization, administration, and management applied to the delivery of occupational therapy services; inter- and intradisciplinary relationships and patterns of organization of health delivery systems.
Category 1.

OT 412 Research Methods in Occupational Therapy

Prerequisite: MA 250

A review and analysis of historical and current research in occupational therapy and of methods of research appropriate to clinical situations.
Category 1.

OT 415 Methods of Occupational Therapy Practice with Psychosocial Diagnoses

Prerequisites: OT 315, OT 320, OT 321, or OT 325, OT 330; to be taken concurrently with OT 416

Investigation of occupational therapy for a variety of psychosocial diagnostic categories. Methods of prevention, health maintenance, adaptation, and intervention; assessment, program planning, implementation, and documentation are explored.
Category 1.

OT 416 Practicum in Occupational Therapy Methods for Psychosocial Diagnoses

Prerequisite: To be taken concurrently with OT 415.

Directed observation and participation in the clinical application of theories and methods of occupational therapy intervention with psychosocial disorders.
Category 1. 1 credit.

OT 417 Occupational Therapy Methods with Psychosocial Diagnoses (Accelerated)

Prerequisite: OT 325

An accelerated course in occupational therapy assessment and treatment approaches with psychosocial diagnoses. Structured specifically for the student with an associate's degree in occupational therapy. Includes practicum.
Category 1. 2 credits.

OT 420 Methods of Facilitating Therapeutic Adaptation

Prerequisites: OT 405 and OT 406, or OT 407

Introduction to the design, fabrication, and use of adapted clothing and equipment, assistive devices, orthotics, and prosthetics; principles of architectural and environmental adaptation.
Category 1.

OT 425 Seminar in Occupational Therapy

Prerequisites: status of occupational therapy senior, and consent of instructor

An extensive investigation of occupational therapy as a discipline, its historical, social, theoretical and philosophical bases, and the roles and responsibilities of entry level and experienced therapists.
Category 1. 4 credits.

OT 450 Level II Fieldwork: First Placement

Prerequisite: Satisfactory completion of coursework required for graduation with a BS degree in occupational therapy

Three months of full-time clinical occupational therapy experience in a setting treating primarily physiological problems. Supervised by experienced clinical occupational therapy faculty.
Category 1. 6 credits.

OT 451 Level II Fieldwork: Second Placement

Prerequisite: Satisfactory completion of coursework required for graduation with a BS degree in occupational therapy

Three months of full-time clinical occupational therapy experience in a setting treating primarily psychosocial or developmental problems. Supervised by experienced clinical occupational therapy faculty.
Category 1. 6 credits.

Philosophy

PH 100 Introduction to Philosophy

The fundamentals of philosophy: its vocabulary, problems, and methods.
Category 1.

PH 110 Introduction to Logic

The basic principles of rational argumentation and critical thinking.
Category 1.

PH 120 History of Western Philosophy

The development of philosophy in the Western World from the ancient Greeks to the twentieth century.
Category 1.

PH 130 Ethics: Human Conduct and Values

The nature of morality and value and their place in the world of human action.
Category 1.

PH 140 Philosophy of Science, Nature, and Man

A philosophical examination of the relation between man and the world as exemplified in science.
Category 1.

PH 200 Philosophy of Being, Knowledge, and God

A critical evaluation of answers to the most general questions of human existence: What is there? How do we know it? How did it come to be?
Category 2.

PH 210 Existentialism and Contemporary Philosophy

An in-depth study of the continental tradition in philosophy.
Category 2.

PH 220 History of American Philosophy

A general overview of the American contribution to the development of Western Philosophy.
Category 2.

PH 230 Religious Philosophies, East and West

An examination of the major religious systems, both oriental and occidental.
Category 2.

PH 300 Philosophy of History
Prerequisite: One semester of philosophy

A study of the meaning and value of history for human life.
Category 3.

PH 310 Philosophy of Art
Prerequisite: One semester of philosophy

An investigation of the nature of aesthetic experience.
Category 3.

PH 320 Philosophy of Education
Prerequisite: One semester of philosophy

A philosophical critique of current educational practices in light of the generally accepted purposes of education.
Category 3.

PH 330 Philosophy, Human Potentiality, and Consciousness
Prerequisite: One semester of philosophy

The application of philosophical knowledge to the problems of creative self-actualization and consciousness.
Category 3.

PH 400 Seminar: Topics in Philosophy
Prerequisite: One semester of philosophy

Specific subject matter chosen by the department in conjunction with student need and demand.
Category 3.

PH 410 Independent Study in Philosophy
Prerequisite: Consent of department and instructor

Tutorials in areas of philosophy not covered in other course offerings.
Category 1. 1-3 credits.

Physical Education

PE 100 Physical Education Activity Courses

Activities include archery, basketball, candlepin bowling, aerobic dance, fitness and weight control, football, golf, racquetball, relaxation, sailing, softball, tennis, volleyball, weight training, yoga, and health fitness.
Category 1. 1 credit.

PE/HE 140 Introduction to Creative Arts Therapies

An experiential and didactic introduction to the separate arts therapies: movement, art, music, and language arts emphasizing the creative process.
Category 3.

PE 175 Principles of Coaching

The values, relationships, and skills necessary to coach children and young adults in competitive athletics.
Category 2.

PE/SO 190 Sport and Society

Analysis of sport as a social system; the implications of sport within interrelational contexts of other social systems.
Category 2.

PE 205 Coaching Team Sports for Men

The techniques and strategies of coaching basketball and baseball.
Category 2.

PE 215 Coaching Tennis

Selecting, training, strategy, and teaching techniques in developing a tennis program.
Category 1.

PE 225 Fundamentals of Athletic Training

The prevention and treatment of all types of athletic injuries. Anatomy, injury recognition, physiology, and taping are included.
Category 2.

PE 230 Mechanical Analysis of Motor Activities

Emphasis on proper utilization of scientific principles; laws of physics, motion, mathematics, psychology, and physiology as applied to specific sports.
Category 2.

PE 235 Intramural Athletics

Planning and implementing intramurals in schools, selecting teams, organizing tournaments, scheduling, officiating, financing, and promoting the program.
Category 2.

PE 240 Athletic Programs

Financing, scheduling, administering, game administration and evaluating boys' and girls' sports in high school.
Category 1.

PE 245 Recreational Programs

Planning, promoting, conducting, financing, and evaluating sports, social, cultural, and special events in public and private recreation programs.
Category 1.

PE/HE 260 First Aid: Advanced Theory and Skill

Common emergencies, cardiopulmonary resuscitation, auto extrication, and emergency childbirth. Opportunity for instructor rating.
Category 3.

PE/HE 275 Fitness for Life

Knowledge of health-related fitness components and their effect on total wellness; emphasis on developing personalized fitness programs, namely cardiovascular endurance.
Category 1.

PE/HE 280 Individualized Stress Management and Relaxation

Knowledge of the causes, symptoms, and related disorders of stress; emphasis on techniques of stress reduction through meditation, exercise, etc.
Category 1.

PE/HE 285 Relaxation Techniques

The focus of the course will be on researching and experiencing various Eastern and Western relaxation modalities. Examples include meditation, guided imagery, hatha yoga, and biofeedback.

PE 300 Fitness Appraisal and Exercise Prescription

Administration and interpretation of health-fitness tests, formulation of individualized exercise prescriptions, and methods of teaching fitness programs.
Category 1.

PE 400 Independent Study in Physical Education/Coaching

Prerequisite: Consent of department

Opportunity to engage in research in an area of special interest not covered in elective course offerings.
Category 1.

PE 410 Field Experience in Physical Education/Coaching

Prerequisite: Consent of department

A 50 hour directed experience in organizing and conducting either physical education or coaching activities at the elementary or secondary level.
Category 1. 2 credits.

PE 420 Practicum in Health Fitness

Prerequisite: Consent of department

Opportunity to gain practical experience under supervision in a health fitness field placement.
Category 1.

Physics

PY 105 Concepts of Physics I

Descriptive presentation of the fundamental concepts of classical physics: motion, energy, momentum, conservation principles, and a consideration of the properties of matter.
Category 1.

PY 106 Concepts of Physics II

A qualitative approach to the fundamental notions of modern physics such as electromagnetic radiation, field theory, atomic spectra, and relativity.
Category 1.

PY 107 Physics of Urban and Environmental Problems

Motion and the use of energy sources in the context of several urban and environmental problems, analysis will be physical and qualitative.
Category 3.

PY 114 Physics of Music

Introductory mechanics and wave principles applied to musical acoustics; demonstrations of musical instruments and measuring.
Category 3.

PY 115 General Physics I

Prerequisite: One year of algebra, which may be taken concurrently

The mechanics of fluids and solids, properties of matter, and heat energy; three lectures and one two-hour laboratory.
Category 1. 4 credits.

PY 116 General Physics II

Prerequisite: One year of algebra

Sound theories of light, electricity, and magnetism, and topics in modern physics; three lectures and a two-hour laboratory.
Category 3. 4 credits.

PY 120 Physics I (Mechanics)

Prerequisite: One year of calculus which may be taken concurrently

Introduction to classical physics with emphasis on fundamental principles and conservation laws; three lectures and one two-hour laboratory.
Category 1. 4 credits.

PY 121 Physics II (Electricity and Magnetism)
Prerequisite: One year of calculus which may be taken concurrently

Properties of electric and magnetic fields; direct and alternating current; passive and active electronic components. Three lectures and one two-hour laboratory.
Category 1. 4 credits.

PY 122 Physics III (Heat and Wave Motion)
Prerequisite: One year of calculus which may be taken concurrently

Fluids, heat, and wave phenomena; lectures and laboratory.
Category 1. 4 credits.

PY 201 Mathematical Physics I
Prerequisites: Calculus I and II

Applied mathematics for students majoring in science or mathematics; power series, complex numbers, determinants and matrices, partial derivatives.
Category 3.

PY 202 Mathematical Physics II
Prerequisite: PY 201

Continuation of PY 201; vector analysis; Fourier series, ordinary differential equations.
Category 3.

PY 210 Mechanics I
Prerequisites: PY 121 and PY 201, which may be taken concurrently

Kinematics and dynamics of point masses, the conservation laws, motion of a system of particles; three lectures and laboratory.
Category 2. 4 credits.

PY 211 Mechanics II
Prerequisite: PY 210

Continuation of PY 210; continuum mechanics, mechanics of rigid bodies, Lagrange's equations; three lectures and laboratory.
Category 3. 4 credits.

PY 215 Biological Physics I
Prerequisite: Six hours of biological science or consent of instructor

Traditional areas of introductory physics, such as mechanics, heat, sound, with emphasis on bioinstrumentation; two lectures and one two-hour laboratory.
Category 3.

PY 216 Biological Physics II
Prerequisite: PY 215

Continuation of PY 215; research project required; two lectures and one two-hour laboratory.
Category 3.

PY 220 Thermodynamics
Prerequisites: PY 122 or PY 116 and PY 201, which may be taken concurrently

Introduction to thermodynamics and statistical mechanics.
Category 3.

PY 230 Electricity and Magnetism I
Prerequisite: PY 210 which may be taken concurrently

The laws of electricity and magnetism in Maxwell's differential form; three lectures and one two-hour laboratory.
Category 3. 4 credits.

PY 231 Electricity and Magnetism II
Prerequisite: PY 230

Continuation of PY 230, solution of Laplace's equation, further consideration of Maxwell's equations; lectures and laboratory.
Category 1. 4 credits.

PY 240 Optics
Prerequisite: PY 116 or PY 122

Reflection, refraction, diffraction, interference, and polarization; the wave model of light.
Category 2.

PY 250 Instrumentation and Electrical Measurement

Electricity and electrical circuits; electronic theory and instrumentation; transducer response in scientific measurements, control elements, and recording devices.
Category 3.

PY 260 Analog and Digital Electronics I
Prerequisite: MA 110

Basic principles of digital and linear integrated circuits. Laboratory on direct-current circuit elements and theorems; breadboard testing of digital and operational amplifier applications; three lectures and a two-hour laboratory.
Category 3. 4 credits.

PY 261 Analog and Digital Electronics II

Continuation of PY 260; additional applications of digital integrated circuits; three lectures and a two-hour laboratory.
Category 3. 4 credits.

PY 300 Investigation of Special Topics in Physics
Prerequisite: Consent of instructor

Guided study course which offers an opportunity to make an in-depth study of a special topic in physics.
Category 3. 1-3 credits.

PY 310 Modern Physics
Prerequisite: One year each of physics and calculus

The atomic nature of matter, special relativity, atomic models, the wave nature of matter, and radioactivity.
Category 1.

PY 320 Quantum Mechanics
Prerequisite: PY 231

The uncertainity principle wave-particle duality, the Schrodinger equation, probability amplitudes, and applications to one-dimensional problems.
Category 3.

PY 330 Senior Physics Laboratory
Prerequisite: PY 231 or consent of instructor

Laboratory work designed to meet the individual needs of students. One three-hour laboratory period per week.
Category 2.

PY/BI 451 Nuclear Instrumentation I
Prerequisite: Consent of NMT coordinator

The structure, functions, and interactions of particulate and non-particulate radiations with matter, detection, calibration, dosage, and statistical methods.
Category 1. 4 credits.

PY/BI 452 Nuclear Instrumentation II
Prerequisite: Consent of NMT coordinator
Designed to further the skills of operating, calibrating, and performing routine maintenance on scanners, gamma cameras, well counters, and liquid scintillation counters.
Category 1. 4 credits.

Political Science

PO 101 Principles of Political Science

An introduction to political analysis; study of the concepts of power, legitimacy, natural law, justice, and liberty.
Category 1.

PO 102 Constitutions: US and Massachusetts

Examines the origins and development of the United States and Massachusetts Constitutions. Meets Massachusetts General Laws, Chapter 73, Sec 2A requirement.
Category 1.

PO 201 International Relations I

Prerequisite: Consent of instructor

The theory of international relations and important contemporary problems.
Category 1.

PO 202 International Relations II

Prerequisite: Consent of instructor

A continuing consideration of the theory of international relations and important contemporary problems.
Category 1.

PO 210 American Government

Prerequisite: PO 101 or consent of instructor

Examines our national government and politics.
Category 1.

PO/HI 211 History of US Foreign Policy I

Colonial origins to the era of the Spanish-American War. The sources and development of US foreign policy in that period.
Category 1.

PO/HI 212 History of US Foreign Policy II

From 1900 to recent times; US foreign policy traditions and the challenges of great power status.
Category 1.

PO 215 State and Local Government

Prerequisite: PO 101

Examines sub-national governments and politics in the United States; the structure and problems of these governments.
Category 1.

PO 216 Political Parties and Pressure Groups

Prerequisite: PO 101 or consent of instructor

Examines the organization, functions, and methods of political parties; the role of interest groups in the American political process.
Category 1.

PO 217 The Legislative Process

Prerequisites: PO 101 and PO 210 or consent of instructor

The nature and function of the US Congress, including legislative campaigns, politics, and major problems of Congress.
Category 3.

PO/HI 218 US Constitutional History I

The development of constitutional history as seen in decisions of the US Supreme Court and their effects from 1789 to 1921.
Category 1.

PO/HI 219 US Constitutional History II

Supreme Court decision-making from 1921; federal-state relations, civil liberties, civil rights, loyalty program, labor, rights of defendants.
Category 1.

PO 220 Comparative Politics I

Prerequisite: PO 101

A comparative study of the politics and governments of Great Britain, West Germany, and the Soviet Union.
Category 1.

PO 221 Comparative Politics II

Prerequisite: PO 101

A comparative study of the political and social systems of South Africa and India, including recent trends in their political development.
Category 1.

PO 222 Government and Politics of Latin America

Prerequisite: PO 101 or consent of instructor

The political organization, problems, and possibilities of representative Latin-American countries. Special emphasis will be given to crisis areas.
Category 3.

PO 330 Politics of the Middle East I

Prerequisite: PO 101 or consent of instructor

Discusses governments and politics of eastern Arab countries, Turkey, Iran, and Israel. International rivalries in the area are also discussed.
Category 1.

PO 331 Politics of the Middle East II

Prerequisite: PO 101 or consent of instructor

Discusses liberation of North African countries from imperialism; politics of independent nation building, and international rivalries in the area.
Category 1.

PO/HI 338 History of Political Theory I

Prerequisite: Completion of sophomore year or consent of instructor

The development of political thought from the Greeks to the Enlightenment.
Category 2.

PO/HI 339 History of Political Theory II

Prerequisite: Completion of sophomore year or consent of instructor

The development of political thought from the Enlightenment to the present.
Category 2.

PO 350 Soviet Government and Politics
Prerequisite: PO 101 or consent of instructor

An analysis of the forces and institutions which have influenced political developments in the Soviet Union since 1917.
Category 2.

PO 351 Comparative East European Government and Politics
Prerequisite: PO 101 or consent of instructor

An analysis of the political developments in the East European nations since World War II.
Category 3.

PO 355 Soviet Foreign Policy
Prerequisite: PO 101 or consent of instructor

Instruments of Soviet foreign relations; an analysis of Russian foreign affairs since 1917.
Category 2.

PO 360 The Government and Politics of China
Prerequisite: PO 101 or consent of instructor

Political and international developments of modern China; Communist ideology and instruments of power.
Category 3.

PO 370 Crisis Politics
Prerequisite: PO 101 or consent of instructor

Analysis of theories regarding the roots of violence, revolution, and terrorism. Special attention will be devoted to violence in America.
Category 2.

PO 380 American Foreign Policy Since the Cold War
Prerequisite: PO 101, HI 112, or consent of instructor

Instruments of American foreign policy; major foreign policy developments since 1947.
Category 2.

PO 385 Power and Policy: The USA and the USSR
Prerequisite: PO 101 or consent of instructor

An analysis of the political institutions, leadership, and practices in the Soviet Union and the US. Focus on the structure of government, the relationship between government and society, and political decision-making.
Category 2.

PO 400 Independent Study in Political Science
Prerequisite: Approval of the department or consent of the instructor

Special topics for advanced research and study under the guidance of a faculty member.
Category 1.

Psychology

Undergraduate Courses

PS 110 General Psychology I

The history of psychology; scientific method; brain and nervous system; developmental psychology; learning; motivation and perception.
Category 1.

PS 111 General Psychology II

Personality theory; psychopathology; psychotherapy; cognition; social behavior; and careers in psychology.
Category 1.

PS 120 Human Development

(Not for major or minor credit)

The study of the elements of change and constancy over the life span in orderly and sequential stages as the organism moves from conception to death. Processes by which the organism is transformed through interaction with the environment.
Category 1.

PS 130 Psychology of Adjustment

(Not for major or minor credit)

Basic principles of personality development and mental health are introduced. Factors contributing to adjustive behavior and stress management are considered.
Category 1.

PS 200 History and Systems of Psychology

Prerequisites: PS 110, PS 111

An historical perspective, tracing the development of psychology into a science.
Category 1.

PS 210 Child Growth and Development

Prerequisite: PS 110

Physical, social, emotional, intellectual, and moral development from conception to adolescence is examined within a framework of various theories.
Category 1.

PS 215 Psychology of Adolescence
Prerequisite: PS 110

The mental, emotional, social and physical changes of contemporary adolescence are examined with emphasis on family, peer, and school influences.
Category 1.

PS 220 Psychology of Aging
Prerequisite: PS 110

Adulthood and old age are studied with special emphasis on current developmental theories.
Category 1.

PS 225 Psychology of Learning
Prerequisite: PS 110

Learning as a fundamental concept in understanding behavior; examines principles and theories of learning, emphasizing experimental findings.
Category 3.

PS 240 Abnormal Psychology
Prerequisite: PS 111

Etiology, dynamics, and treatment of psychopathology and their relation to normal personality are considered from traditional and contemporary perspectives.
Category 1.

PS 250 Social Psychology
Prerequisite: PS 111

The psychological dynamics of social interaction including verbal and nonverbal communication, group dynamics, and attitude formation and change.
Category 1.

PS 260 Psychology of Human Sexuality
Prerequisite: PS 110

Sexuality as a foundation of personality. The wide range of human sexuality is explored; sexual development, roles, attitudes and behaviors.
Category 2.

PS 263 Psychology of Women
Prerequisite: PS 110

Women's psychological development throughout the lifespan will be examined, including female development, achievement, stereotyping, stress, violence and psychological disorders.
Category 3.

PS 265 Psychology of Marriage
Prerequisite: PS 111

Marriage and alternatives are explored, focusing on personal growth, partner selection, loving styles, communication, sex, crises, and termination of relationships.
Category 3.

PS 280 Sensation and Perception
Prerequisite: PS 110

Selected sensory and perceptual processes are studied in the context of current theory and research.
Category 3.

PS 285 Motivation
Prerequisite: PS 110

A study of conditions that arouse, sustain, and direct behavior. Topics include stress, competence, controllability, altruism, self-esteem, and employment related motivation.
Category 3.

PS 300 Psychological Statistics
Prerequisite: Completion of sophomore year or consent of instructor

Data tabulation; graphing; measurement of central tendency, variability, and correlation; hypothesis testing applied to psychological data.
Category 1.

PS 305 Psychological Methods
Prerequisites: PS 300, completion of sophomore year or consent of instructor

The design, conduct, analysis and reporting of research are stressed. A broad range of laboratory experiments and demonstrations are conducted.
Category 1.

PS 310 Introduction to the Study of Exceptional Children
Prerequisites: PS 110, PS 111

Characteristics and needs of children with exceptionalities: retardation, giftedness, physical or sensory disabilities, emotional or social maladjustments.
Category 1.

PS 318 Behavior Management Techniques
Prerequisites: PS 110, PS 111

Considers the basic concepts of behavior management, including behavior modification for exceptional and normal populations.
Category 2.

PS 330 Theories of Personality
Prerequisites: PS 110, PS 111

A survey of major theories of personality. Why people behave as they do is explored through the different theories.
Category 1.

PS 340 Introduction to Psychometrics
Prerequisites: PS 110, PS 111, PS 300

Methods and instruments used in the evaluation of the psychological attributes of human beings.
Category 1.

PS 350 Group Dynamics
Prerequisite: PS 110

Group process deals with the basic issues of leadership, membership, developmental stages and types of groups, theoretically and experientially.
Category 2.

PS 360 Industrial Psychology
Prerequisite: PS 110

A concentration on the work of the psychologist in business and industry in the public and private sectors.
Category 2.

PS 380 Physiological Psychology
Prerequisites: PS 110, PS 111

Psychobiological problems; current physiological research in emotion, motivation, and learning and the use of physiological methods in psychology.
Category 3.

PS 400 Internship in Psychology
Prerequisites: Completion of junior year and consent of instructor

Provides opportunity to advanced students to increase experience through internship with sponsoring community organization, institution, or business under appropriate supervision.
Category 1. 1-3 credits.

PS 405 Independent Study in Psychology
Prerequisites: PS 110, PS 111, PS 200, PS 300, PS 305 and consent of instructor

Student will pursue an area of special interest through research or field work under close supervision of a faculty member.
Category 1. 1-3 credits.

PS 410 Seminar in Developmental Psychology
Prerequisites: PS 110, PS 111, PS 210, PS 215

Patterns of physical, mental and emotional development are explored with emphasis on independent work.
Category 3.

PS 430 Encounter: Theory and Practice
Prerequisites: PS 110, PS 111, and consent of instructor

A basic encounter group experience emphasizing increased personal and interpersonal sensitivity; assigned readings, journal writing, and analysis.
Category 2.

PS 435 Clinical Psychology
Prerequisites: PS 110, PS 111, PS 240

Practical issues, methods and techniques of current psychotherapies with emphasis on psychoanalytic, client-centered, and behavioral approaches.
Category 3.

PS 440 Individual and Group Psychotherapy
Prerequisites: PS 110, PS 111

Theoretical and eclectic approaches to individual and group psychotherapy.
Category 3.

PS 450 Existential-Humanistic Psychology
Prerequisites: PS 110, PS 111, and consent of instructor

Orientation to the existential-humanistic theories of psychology, phenomenological approaches to behavior, personality, and psychotherapy.
Category 3.

PS 480 Advanced Experimental Psychology
Prerequisites: PS 110, PS 111, PS 300

Laboratory procedures and techniques on an advanced level applied to selected independent projects.
Category 3.

PS 485 Introduction to Neuropsychology
Prerequisite: Consent of instructor

Human brain behavior relationships; neurological correlates of attention, cognition, perception, consequences of damage upon behavior.
Category 3.

PS 490 Seminar in Industrial Psychology
Prerequisites: PS 110, PS 111, PS 200, PS 285, PS 300, PS 305, PS 340, PS 350, PS 360, PS 400

An overview of the student's theoretical and experiential learning in the industrial psychology concentration.
Category 1.

PS 495 Special Topics in Psychology
Prerequisites: PS 110, PS 111, and consent of instructor

Selected areas of mutual interest to instructor and students. Topics and prerequisites are announced in advance.
Category 1.

Graduate Courses

PS 915 Psychodiagnostic Techniques

Survey of psychodiagnostic techniques, instruments, and methods employed in evaluation and diagnosing psychological factors. Theoretical issues in psychodiagnosis are also discussed.

PS 930 Advanced Abnormal Psychology

Prerequisite: PS 240 or equivalent

The etiology, dynamics, and treatment of psychopathology are studied through lecture, discussion, and independent reading, and research.

PS 959 Issues in School Psychology

Emphasis on the legal and professional responsibilities of school psychologists. Special techniques of testing and evaluation are considered.

PS 980 Practicum in School Psychology I

Prerequisite: Students enrolled in MEd/CAGS in school psychology who have completed 42 credits

Students work 300 clock hours under supervision of a certified practicing school psychologist in K-12 settings; weekly seminars.
6 credits.

PS 990 Practicum in School Psychology II

Prerequisite: PS 980

Students work 300 clock hours under qualified psychological supervision in a school, hospital, or clinic; weekly seminars.
6 credits.

Sociology

SO 100 Introduction to Sociology

The nature of group behavior and social interaction viewed through analysis of the structure, norms, and values of human groups.
Category 1.

SO 110 Cultural Anthropology

Cross-cultural analysis of the human capacity for adaptation and technological and ideological development. Significant field studies will be examined.
Category 1.

SO 115 Disability and Society

Examines the social basis of disability, the place of the disabled in society, and the social responses to disability.
Category 3.

SO 120 Courtship and Marriage

American customs of courtship and marriage, past and present; marital law, and analysis of mate selection and marital roles.
Category 1.

SO 130 Race and Ethnicity

Dynamic processes and patterns of inter-group relations with special emphasis on socially perceived racial and ethnic variables.
Category 3.

SO/PE 190 Sport and Society

Analysis of sport as a social system. The implication of sport within interrelational contexts of other social systems.
Category 1.

SO 200 Contemporary Social Problems

Prerequisite: SO 100 or SO 110

Analysis of social, political, urban, and industrial changes which have introduced specific problems into contemporary society.
Category 1.

SO 205 Issues in American Society
Prerequisite: SO 100

Identification and analysis of the current social issues faced by modern industrial societies and analysis of policies and processes designed to resolve these issues.
Category 3.

SO 210 Society, Science, and Technology
Prerequisite: SO 100 or SO 110

Relationships and patterns of social issues created by the nature of scientific and technological advances.
Category 3.

SO 215 Medical Sociology
Prerequisite: SO 100 or SO 110

The structure of health care delivery systems and role interaction between levels of health care personnel, patients, and families of patients.
Category 3.

SO 220 Sociology of the Family
Prerequisite: SO 100 or SO 110

A comparative approach to the study of the structure of family systems with emphasis on changing patterns of family life.
Category 3.

SO 230 Political Sociology
Prerequisite: SO 100 or SO 110

Foundations of social movements in political phenomena, social conditions, and emerging political institutions; the structural basis of social change and politics.
Category 3.

SO 240 Sociology of Education
Prerequisite: SO 100 or SO 110

Study of American education, emphasizing the social, political, and economic factors that influence it as well as its institutional structure.
Category 3.

SO 250 Sociology of Religion
Prerequisite: SO 100 or SO 110

Comparative study of systems of belief and religious institutions with emphasis on natural and mystical components of religious phenomena.
Category 3.

SO 258 Statistics
Prerequisite: SO 100 or SO 110

Data tabulation and reduction, measures of central tendency, variability, correlation, prediction, and association. (PS 300 may be substituted.)
Category 3.

SO 270 Social Theory I
Prerequisite: SO 100 or SO 110

Fundamental concepts and intellectual traditions, especially the contributions of Comte, Spencer, Marx, Toennes, Durkheim, and Simmel.
Category 3.

SO 280 Research Methods of Sociology
Prerequisite: SO 100 or SO 110

An analysis of the research function in sociology; the conduct of research appropriate to undergraduate students; the formal presentation of research papers.
Category 1.

SO 300 Social Change
Prerequisites: Two courses at 200-level

Causes, characteristics, and consequences of change in the established patterns of interaction and behavior in society.
Category 3.

SO 310 Formal Organizations
Prerequisites: Two courses at 200-level

The structure and function of, and communications systems within, formal and complex organizations; primary focus on theoretical aspects of organizations.
Category 3.

SO 315 Collective Behavior
Prerequisites: Two courses at 200-level or consent of department

Processes by which new norms and forms of social organization emerge from group behavior, aggregate behavior, and social movements.
Category 3.

SO 330 Criminology
Prerequisites: Two courses at 200-level or consent of department

Theoretical perspective on crime, criminals, and the social aspects of interrelationships within, and between, the components of the criminal justice system.
Category 3.

SO 335 Juvenile Delinquency
Prerequisites: Two courses at 200-level or consent of department

Dynamics of small group involvement and other environmental influences in the shaping of an individual's personality.
Category 3.

SO 340 Social Psychology
Prerequisites: Two courses at 200-level or consent of department

Dynamics of small group involvement and other environmental influences on the shaping of an individual's personality.
Category 3.

SO 345 Sociology of Deviance
Prerequisites: Two courses at 200-level

The study of the social consequences and apparent causes of deviant behavior through the analysis of the processes of socialization, intra- and inter-group relations, and the social contexts within which deviation is defined.
Category 3.

SO 350 Social Stratification
Prerequisites: Two courses at 200-level

Recurrent patterns of inter-group contact, differentiation, ranking, and evaluation; theories and concepts which explain the development process of open and closed societies; characteristics of stratification systems and their pervasive influence on social institutions.
Category 1.

SO 360 Urban Sociology
Prerequisites: Two courses at 200-level or consent of instructor

A cross-cultural study of urban social systems and the phenomena and problems connected with the planning process.
Category 3.

SO 370 Social Theory II
Prerequisites: SO 270, two courses at 200-level, or consent of department

The development of conflict theory and the behavioristic schools theory.
Category 3.

SO 375 Contemporary Social Theory
Prerequisites: SO 270, SO 370, or two courses at 200-level

Analytical devices, conceptual schemes, and models used by contemporary theorists with emphasis on structural sociology.
Category 3.

SO 390 Sociology of Mental Health
Prerequisites: Two courses at 200-level or consent of department

The social definition of mental illness which contributes to social disorder, and its treatment and prevention.
Category 3.

SO 400 Independent Study
Prerequisites: Eight prior courses in sociology or consent of department

For advanced sociology majors only; topic to be approved by an independent study advisor.
Category 1. 1-3 credits.

SO 410 Field Work
Prerequisites: Eight prior courses in sociology or consent of department

Data collection based on participant observation within a social service organization; assignment approval by field-work advisor.
Category 1. 1-6 credits.

SO 420 Seminar in Sociology
Prerequisites: Eight prior courses in sociology or consent of department

Advanced study topics in selected areas of sociology; announcement made at pre-registration time.
Category 3. 1-3 credits.

Urban Studies

Undergraduate Courses

UR 101 Introduction to Urban Systems

A broad contextual overview of urban life that examines from a systems perspective the relationship of man and his environment.
Category 1.

UR 201 Analysis of Urban Systems

Prerequisite: UR 101 or consent of instructor

Analysis of activities, programs, and policies designed to sustain and enhance the livability of individuals in an urban environment.
Category 3.

UR 202 Aging in Metropolitan Society

An introduction to gerontology stressing the social, economic and political aspects of aging in the urban environment.
Category 2.

UR 212 American Metropolitan Evolution

Prerequisite: UR 101 or consent of instructor

Development of metropolitan America from a multi-disciplinary approach with emphasis upon dynamics of urban growth, internal development of cities, immigrations, socio-economic stratification, metropolitanization, and problems deriving from growth.
Category 2.

UR 213 Human Identity and the Urban Environment

Prerequisite: UR 101 or consent of instructor

Study of factors affecting identity in contemporary urban settings including race, ethnicity, class, age, and sex categories and roles.
Category 1.

UR 215 Information Management in Urban Studies

Prerequisite: UR 101

Familarizes students with various ways of gathering, managing and creativity using information with a variety of analyses and reporting techniques.
Category 1.

UR 301 Cities and Suburbs
Prerequisite: UR 101 or consent of instructor

Multidisciplinary study of city-suburban growth patterns and problems both of the past, and those that hamper metropolitan cooperation and affect the quality of life of both city and suburban residents and businesses.
Category 2.

UR 305 Group Conflict in the Urban Community
Prerequisite: UR 101 or consent of instructor

Study of conflict and its resolution in contemporary urban settings. Personal, small group, and societal strategies for conflict resolution will be explored.
Category 2.

UR 306 Interviewing and Counseling Techniques
Prerequisite: Consent of instructor

Investigation of skills and process of interviewing and counseling with emphasis upon theory and practice, participant exercises, and development of helping skills and effective counseling relationships.
Category 2.

UR 310 Power, Politics, and Decision-Making in Urban Communities
Prerequisite: UR 101 or consent of instructor

Exploration from multi-disciplinary approach of social power and its relation to decision-making in urban communities. Emphasis on theories of power, understanding research methodologies, and policy implications.
Category 2.

UR 311 Community Politics and Policies
Prerequisite: UR 101 or consent of instructor

Political behavior and perceptions in cities and towns from a multidisciplinary perspective with emphasis on how policy is initiated, developed, and implemented in various governmental forms.
Category 2.

UR 320 Human Needs and Social Services
Prerequisite: UR 101 or consent of instructor

Analysis of human needs as they change over a life span; why needs go unmet, and the role of human services in meeting needs.
Category 2.

UR 321 Social Work in the Urban Society
Prerequisite: UR 101 or consent of instructor

Overview of approaches used by social work professionals in assessing and meeting needs, including casework, community organization and planning.
Category 2.

UR 325 Social Casework in the Urban Setting
Prerequisite: UR 101 or consent of instructor

Introduction to various social work approaches—client-centered, task-centered, Gestalt, Carhuff, reality therapy; role playing and counseling simulations utilized.
Category 2.

UR 326 Career Planning in Urban Society
Prerequisite: UR 101 or consent of instructor

Research of the urban employment market, occupational sources, basic interviewing techniques, developing a job brief, and elaboration of a career plan.
Category 3.

UR 330 Justice In the Urban Society
Prerequisite: UR 101 or consent of instructor

Theoretical perspectives on the mission of the criminal justice system and the daily operation of its sub-components.
Category 3.

UR 331 Crime and the City
Prerequisite: UR 101 or consent of instructor

Investigation of crime in contemporary urban society and the social, legal, economic, and cultural strategies for dealing with crime and deviance.
Category 3

UR 340 Urban Housing Dilemma
Prerequisite: UR 101 or consent of instructor

Analysis of the factors that shape the nature, location, and supply of urban housing with special focus on federal policies and the housing needs of elders.
Category 1.

UR 341 Urban Health and Social Services Systems
Prerequisite: UR 101 or consent of instructor

Analysis of health-care planning and delivery systems emphasizing the role of services within these systems and the health needs of elder citizens.
Category 1.

UR 350 Urban Youth in American Society
Prerequisite: UR 101 or consent of instructor

Role and problems of youth in urban societies viewed from a variety of social science perspectives with additional employment of contemporary music and literature.
Category 3

UR 351 Public Policy and Youth Services
Prerequisite: UR 101 or consent of instructor

Role of theory, attitudes, and public opinion in the formation of policies concerning delinquency with exploration of current practices and innovative strategies.
Category 2.

UR 352 Policy Planning for an Aging Society
Prerequisite: Consent of instructor

Analysis of current social policies in regard to elders and exploration of ways in which policies need to be altered to meet growing elder needs.
Category 1.

UR 360 Environmental Systems and Public Policy
Prerequisite: UR 101 or consent of instructor

Examination of urban ecosystems, focusing on land uses designed to effectively utilize water, open space, and other natural resources.
Category 3

UR 361 Public Policy and Environmental Issues
Prerequisite: UR 101 or consent of instructor

Investigation of the factors that determine the formation of public policy on the environment with consideration of the roles played by state and federal regulatory agencies.
Category 3

UR 370 Structure and Function of Urban Organizations
Prerequisite: UR 101 or consent of instructor

Advanced leadership seminar for students interested in pursuing management careers in public and non-profit organizations.
Category 3

UR 401 Research Seminar in Urban Studies
Prerequisite: UR 101 or consent of instructor

Research skills for urban-based projects including techniques in gathering, analyzing, and reporting data and various forms of field research.
Category 1.

UR 410 Assigned Research in Urban Affairs
Prerequisite: UR 101 or consent of instructor

Individual or small group directed research into selected problems and issues in urban affairs.
Category 3.

UR 411 Assigned Readings in Urban Affairs
Prerequisite: UR 101 or consent of instructor

Directed readings for students interested in special topics related to their academic program of study.
Category 2.

UR 421 Selected Topics in Urban Studies
Prerequisite: UR 101 or consent of instructor

In-depth examination of topical issues challenging the intellectual and creative interests of advanced students in urban studies.
Category 3.

UR 422 Selected Topics in Gerontology
Prerequisite: Consent of instructor

In-depth examination of topical issues in gerontology which afford the advanced student the opportunity to pursue gerontological research.
Category 3.

UR 430 Seminar in Current Urban Problems
Prerequisite: UR 101 or consent of instructor

Individual and group investigation and research of selected and current urban problems.
Category 3.

UR 432 Demographic Research Seminar
Prerequisite: UR 101 or consent of instructor

Small group or individual research using various sources in gathering, interpreting, reporting and projecting policy implications of demographic data.
Category 1.

UR 440 Practicum in Urban Studies
Prerequisite: UR 101 or consent of instructor

Directed experiential study for advanced students.
Category 3.

UR 450 Internships in Urban Studies
Prerequisites: Completion of 21 credits in Urban Studies and consent of instructor

Supervised and intensive semester-long experience in community agencies, including weekly group seminar.
Category 1.

Graduate Courses

UR 930 Communications for Effective Management
Effective utilization of media, memoranda, digests, letters, formal reports, and large-scale meetings and conferences in managing human service organizations.

UR 932 Practices in Community Organization
Studies the principles and methods of effective community organization as a process of helping people and communities to help themselves. Range of theoretical and pragmatic approaches considered.

UR 940 Leadership Skills and Social Group Work
Explores values, objectives, and principles of effective group leadership. Analysis of group formation, inter-group relations, developmental group stages, and termination.

UR 942 Organizational Theory and Effective Intervention

Organizational theory and development strategies considered. Formal and informal aspects of organizations, authority structures, specialization and integration of functions, and the role of professional managers.

UR 944 Politics, Public Policy and the Human Services

An explication of the nature of political power and the influence of power upon the delivery of various types of social services.

UR 945 Financial Management for Non-Profit Organizations

Theoretical and practical approaches to the allocation and control of financial resources in non-profit settings. Conventional and non-conventional budgeting techniques, cost/benefit analysis, and preparation of financial statements.

UR 946 Seminar in Program Analysis and Evaluation

Explores philosophical issues, politics, and specific evaluation instruments involved in effective program analysis upon utilization of computer systems.

UR 948 Advanced Supervision Skills

Examines supervision, staff development, and training in human services organizations. Case studies and supervision simulations utilized.

UR 949 Strategic Decision-Making and Computer Systems

The design, use, and organizational impact of the computer on managerial processes. Topics include systems design, modeling, inquiry systems, management information systems and simulation.

UR 950 Unions and the Public Sector

An intensive examination of key collective bargaining topics. Topics include grievance-arbitration processes, productivity bargaining, and impasse resolutions in the public sector.

UR 990 Action Research I

Design and implement action research project in Human Services.

UR 991 Action Research II

Continuation of UR 990

UR 993 Marketing in Non-Profit Organizations

Examination of the role of marketing concepts and tools in non-profit organizations. Marketing research, product development, pricing, advertising, publicity, and market control studied in the non-profit sphere.

UR 994 Assigned Readings in Human Service Management

Prerequisite: UR 940

Independent study under faculty supervision. Student will define area of advanced study in human service management.

UR 995 Accounting and Budgeting for Public Management

Introduction to accounting and budgeting concepts as applied to management in federal, state or local public agencies. Topics include control limit theorem, confidence intervals, probability values, analysis of variance, simple and multiple regressions, and partial and multiple correlations.

UR 996 Public Law

Legal framework and constraints within which human service administrators operate. Discussion of rights and responsibilities, and discretionary limits of managerial decision-making.

UR 997 Personnel Management and Non-Profit Organizations

Introduction to personnel management, manpower, planning, employee selection, recruitment strategies, personnel practices, employee evaluation, and labor relations. Special focus upon human service applications.

UR 998 Research in Human Service Management
Prerequisite: UR 940

Supervised research in human service management. Students will learn a variety of research tools specifically relevant to research in human service organizations.

8. Officials of the College

MASSACHUSETTS BOARD OF REGENTS OF HIGHER EDUCATION

Ronald M. Alman
Mary Lou Anderson
David J. Beaubien
Nicholas Boraski
Paul S. Doherty
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Honorable J. John Fox
Ellen C. Guiney
Kathleen Harrington, R.S.M.
Joe M. Henson
Thatcher W. Kezer, III
Susie Kim
L. Edward Lashman, *Chair*
Paul Marks
Hassan Minor
Elizabeth B. Rawlins

BOARD OF TRUSTEES

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Susan E. Gotz, *Vice Chair*
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Domenic A. DiPilato
Patricia A. Greenlaw
Jordan Levy
John J. Mitchell, Esq.
Joseph P. Sonier
Russell E. Vickstrom
Frances C. Whitney
President Philip D. Vairo, *Secretary*
Judith A. St. Amand, *Assistant Secretary*

ADMINISTRATION

OFFICE OF THE PRESIDENT

Philip D. Vairo, President of the College (1982)
A.B. Hunter College; M.A. New York University; Ed.D. Duke University

Linda M. Doherty, Director, Institutional Advancement and Alumni Affairs (1983)
B.S., M.Ed., Worcester State College

Irene D. Leonard, Director, Personnel (1976)
B.S., M.Ed., Worcester State College

Maurice R. Poirier, Director, Community Services (1971)
A.B., Worcester State College

Judith A. St. Amand, Staff Assistant/Administrative Assistant to the President (1970)

Louise Pitts Stowe, Director, Affirmative Action (1973)
B.M., New England Conservatory of Music; Ed.M. Boston University; Ph.D., Boston College

OFFICE OF ACADEMIC AFFAIRS

Kalyan K. Ghosh, Vice President, Academic Affairs (1987)
B.S., M.S., Ph.D., University of Calcutta

Dean, Graduate Studies (1988) To be appointed.

Dean, Undergraduate Studies (1988) To be appointed.

Robert C. Weber, Associate Dean, Undergraduate Studies (1984)
B.S., Slippery Rock State College; M.A., Miami University; Ph.D., University of Wisconsin

Jeanne M. Bowen, Director, Financial Aid (1984)
B.S., M.B.A., Cornell University; M.S. Ed., State University of New York Cortland

Caroline M. Chiccarelli, Director, Evening Undergraduate & Summer Programs (1979) A.B., Newton College of the Sacred Heart; M.A., Fairleigh Dickinson University

Carol A. Erban, Staff Assistant, Financial Aid (1986)
B.S., Central New England College of Technology

Karen Jones, Staff Associate, Academic Affairs (1987)
A.B., Saint Louis University; M.S., Ph.D., University of Rochester

Michel F. Lussier, Staff Assistant, Financial Aid (1986)
A.B., Anna Maria College

Linda M. Masterson, Assistant Director, Admissions (1983)
B.S., M.Ed., Worcester State College

Patricia A. McManus, Staff Assistant, Admissions Officer (1983)
B.S., Worcester State College

Angela J. Pearson, Staff Assistant, Video & Production Services Coordinator (1986) B.S., Southern Illinois University

E. Bruce Plummer, Director, Learning Resources Center (1971)
A.B., Ohio Wesleyan University; M.A., Kent State University

Gretchen Ryder Sharry, Director, Student Records and Registrar (1987)
B.S., University of Maine, Farmington; M.A., Ohio State University

Cynthia S. Talbert, Director, Corporate & Continuing Education (1983)
B.S., Ed.M., Worcester State College

E. Jay Tierney, Director, Admissions (1978)
A.B., St. Michael's College; Ed.M., Worcester State College, C.A.G.S. University of Massachusetts

OFFICE OF STUDENT AFFAIRS

James J. Rauker, Vice President, Student Affairs (1984)
B.A., M.A., Ph.D. University of Iowa

Paul M. Joseph, Associate Dean, Student Affairs (1971)
B.A., Worcester State College; M.A., Anna Maria College

James R. Alberque, Associate Director, Special Student Services (1973)
B.S., St. Bonaventure University; M.A. University of Cincinnati

Bruce S. Baker, Staff Assistant, Sports Information and Intramural Director (1983)

Vivian A. Bartlett, Staff Assistant, College Nurse (1981)
R.N., St. Vincent Hospital

Sidney Buxton, Director, Minority Affairs and Learning Assistance Programs (1975) A.B., M.S., University of Bridgeport

Susan E. Chapman, Director, Athletics (1988)
B.S., University of Massachusetts; M.Ed., Worcester State College

David Cormier, Staff Assistant, Sergeant, Campus Security (1986)

Laurie J. Drazek, Staff Assistant, Housing (1987)
A.B., Trinity College; M.Ed., Ohio University

James R. Granger, Staff Associate, Director, Campus Security (1985)
B.A., College of the Holy Cross; M.A., Clark University

Alan E. Jackson, Staff Assistant, Operations Manager, Student Center (1983)
A.B., Southeastern Massachusetts University; M.Ed., Worcester State College

Robert E. Jennings, Jr., Staff Associate, Director, Housing (1985)
B.A., Assumption College; M.Ed., University of Massachusetts

Oscar Larsson, Staff Assistant, Intramural Athletics (1973)

Walter J. Lennon, Director, Counseling and Placement (1974)
A.B., St. John's University; M.A., Anna Maria College

Dennis L. Lindblom, Staff Associate, Student Development Officer, Special Services (1982) B.A., University of Massachusetts; M.A., C.A.G.S., Assumption College

James M. Morrison, Staff Associate, Director, Health Services (1974)
A.B., College of the Holy Cross; M.D., St. Louis University

Carmen S. Negron, Staff Assistant, Special Services (1987)
A.B., Worcester State College

Charles J. Oroszko, Assistant Director, Counseling and Placement (1978)
A.B., M.A., C.A.G.S., Assumption College

Susan Melden Palatucci, Staff Associate, Counselor (1985)
B.A., University of Maine; M.A., Assumption College

Timothy J. Sullivan, Assistant Director, Student Center/Activities (1980)
A.B., Clark University; M.A., Assumption College

Marcela A. Uribe, Staff Assistant, Activity Coordinator & Recruitment Outreach Specialist (1982) B.S., Worcester State College

OFFICE OF THE TREASURER

John A. Harrison, Treasurer (1985)
A.A.S., Corning Community College; B.S., Elmira College; M.A.D., Lynchburg College

William J. Butler, Director, Fiscal Affairs (1953)
B.S., Clark University

Kenneth C. Barton, Staff Associate, Chief Accountant (1971)

Christene E. Cuhna, Staff Associate/Assistant to the Treasurer (1988)
A.S. Middlesex Community College; B.S. Bentley College; CPA, Massachusetts

OFFICE OF THE DEAN OF ADMINISTRATION

Angelo R. Scola, Dean of Administration (1974)
A.B., Clark University; Ed.M., Worcester State College; J.D., New England School of Law

Robert A. Clark, Staff Assistant, Environmental Safety Officer (1967)
B.S Ed., Worcester State College

Brian R. Dinsdale, Director, Printing and Publishing (1982)

Vincent P. Donohue, Staff Assistant, Administrative Services (1983)
B.B.A., M.B.A., University of Massachusetts

William E. Jarvi, Staff Associate, Operations Manager/Facilities (1974)

OFFICE OF INFORMATION SYSTEMS

Robert Caron, Director, Management Information Systems (1985)
B.S., M.S., Bentley College

Mary Jane Dinsdale, Staff Assistant, Computer Center (1987)
A.B., Worcester State College

Colleen E. Sheehan, Staff Assistant, Computer Programmer (1983)
B.S., Worcester State College

Francis O. Vaudreuil, Assistant Director, MIS, Manager, Computer Operations (1979) A.S., Worcester Industrial Technical Institute; B.S. Worcester State College

PROFESSORS EMERITI

Helen G. Agbay Department of Spanish	1974
Lawrence A. Averill, Department of Psychology	1974
Vera M. (Dowden) Baldwin, Department of Education	1974
Nora M. Barraford, Department of English	1984
M. Kathleen Burns, Department of Education	1983
Harold L. Chapman, Department of Natural and Earth Sciences	1988
Sr. Josephina Concannon, Department of Education	1976
Mary T. Dolphin, Department of Art	1984
Florence Fraumeni, Department of Education	1985
Yvonne Gallant-Martel, Department of French	1977
James E. Girouard, Department of Health Sciences	1985
Ruth Griffiths, Department of Education	1975
Rose Haroian, Department of Communication Disorders	1979
Mary T. Hayes, Department of Education	1974
Marion J. Jennings, Department of Education	1978
Francis L. Jones, Departments of Sociology and Latin	1974
William D. Joyce, Department of Media	1983
Abram Kaminsky, Department of Music	1982
Robert F. Kelley, Department of Natural and Earth Sciences	1988
Grace A. Kendrick, Department of Music	1974
Edward H. Leonard, Department of Natural Science	1984
Catherine Lewicke, Department of Education	1982
Joseph C. Lonergan, Department of Psychology	1984
William K. Masterson, Department of Natural and Earth Sciences	1987

Garrett Mitchell, Jr., Department of Media, Arts, and Philosophy	1986
Rita M. L. Morris, Department of Geography	1984
Francis J. O'Connor, Department of Spanish	1980
J. Francis O'Mara, Department of Education	1977
Robert F. Perry, Department of Natural and Earth Sciences	1987
Helga E. Peterson, Department of Education	1974
Vincent Piccolo, Department of Media, Arts, and Philosophy	1988
Catherine I. Quint, Department of Education	1985
Joseph W. Riordan, Department of Mathematics	1974
Thomas L. Roberts, Department of Natural and Earth Sciences	1988
Evelyn Robinson, Department of Mathematics	1978
Eugene M. Scanlon, Department of Education and Human Resources	1988
Joseph P. Scannell, Department of Education	1984
Helen G. Shaughnessy, Department of Education	1986
Joseph A. Shea, Department of Psychology	1983
William L. Sullivan, Department of English	1983
G. Flint Taylor, Department of Social and Behavioral Sciences	1985
Anthony W. Thurston, Department of Biology	1983
Francis G. Walett, Department of History	1979
James D. Widmayer, Department of Social and Behavioral Sciences	1988
Madelin A. Wilmarth, Department of Education	1974

FACULTY

ART

Doris M. Carter, Professor (1967)
B.S., Massachusetts College of Art; M.A., University of California, San Jose; Ed.D. University of Massachusetts

Jacqueline G. Casale, Associate Professor (1967)
A.B., New York University; M.A., Tufts University

Sandra Kocher, Assistant Professor (1970)
A.B., Oberlin College; M.A., Stanford University

Ellen V. Kosmer, Professor (1964)
B.F.A., Massachusetts College of Art; M.A., Western Reserve University; Ph.D., Yale University

Michel D. Merle, Associate Professor (1971)
A.B., M.A., Columbia University; M.F.A., Instituto Allende

BIOLOGY

Edwin A. Boger, Sr. Professor (1968)
A.B., Valparaiso University; M.S., University of Connecticut; Ph.D., Clark University

Carol M. Chauvin-Fortier, Professor (1958)
B.S., Good Counsel College; M.S., State University of New York, Albany; Ph.D., Boston University

Anne M. Gilroy, Instructor (1987)
A.B., University of Rhode Island; M.A., San Jose State University

Terry E. Graham, Professor (1970)
A.B., Suffolk University; M.S., University of New Hampshire; Ph.D., University of Rhode Island

Paul A. Holle, Professor (1957)
A.B., Valparaiso University; M.S., Ph.D., Notre Dame University

Surindar M. Paracer, Professor (1970)
B.S., Punjab University; M.S., South Dakota University; Ph.D., University of California

Bruce D. Russell, Associate Professor (1965)
B.S., Illinois College; M.S., University of Arkansas

BUSINESS ADMINISTRATION

Arnold J. Bornfriend, Professor (1975)
A.B., City University of New York; Ph.D., Columbia University

George T. Downey, Professor (1969)
B.S., Worcester State College; M.A., Ph.D., Clark University

Leonard F. Farrey, Professor (1965)
B.S., Ed.M. Worcester State College; Ed.D., University of Massachusetts

Robert J. Hartwig, Professor (1970)
A.B., Providence College; M.A., Ph.D., University of Wisconsin; M.B.A., Nichols College, C.A.G.S., Bryant College

Renuka Jain, Assistant Professor (1985)
M.Sc., Rajastham University; Ph.D., McGill University

Donald L. Joyal, Associate Professor (1977)
B.S., New Hampshire College; M.B.A., Bryant College; M.A., Suffolk University; C.A.G.S., Boston State College; C.A.G.S., University of Massachusetts

Richard S. Juralewicz, Professor (1973)
B.M.E., General Motors Institute of Technology; M.S., Ph.D., Rensselaer Polytechnic Institute

Felix E. Masterson, Professor (1968)
A.B., Assumption College; M.A., Clark University; Diploma, Prof. Ed., University of Connecticut; Ph.D., University of Michigan

Gary W. McEachern, Assistant Professor (1975)
B.S., Norwich University; M.B.A., Western New England College

Dennis P. Moore, Assistant Professor (1983)
B.S., New Hampshire College; M.B.A., Northeastern University; M.S., Bentley College; CPA, Massachusetts

Maureen C. Stefanini, Professor (1967)
B.S., Ed.M., Worcester State College; M.S., Management, Massachusetts Institute of Technology; Ed.D., Boston University

James J. Swanson, Assistant Professor (1984)
B.S., Bryant College; M.B.A., University of Rhode Island; M.S., Bryant College; CPA, Rhode Island

CHEMISTRY

Alan D. Cooper, Professor (1970)
B.S., Tufts University; M.A., Ph.D., Boston University

Arthur C. Ferguson, Professor (1970)
A.B., Oberlin College; Ph.D., University of Wisconsin

Melvin Merken, Professor (1958)
B.S., M.A., Tufts University; Ed.D., Boston University

Lloyd P. Wheaton, Associate Professor (1965)
A.B., Harvard University; M.S., Northeastern University

Estelle C. Zoll-Resnek, Professor (1967)
A.B., Boston University; Ph.D., University of Delaware

COMMUNICATION DISORDERS

Anna B. Cohen, Professor (1973)
A.B., Newark State College; M.A., University of Wisconsin; Ed.D., Columbia University

Carol E. Lysaght, Professor (1972)
B.S., Salem State College; Ed.M., Ed.D., Boston University

John F. Mclaughlin, Associate Professor (1968)
B.S., College of the Holy Cross; Ed.M., Worcester State College

Maryann H. Power, Associate Professor (1979)
A.B., University of Massachusetts; Ed.M., Salem State College; Ed.D., Clark University

Susan V. Rezen, Professor (1980)
A.B., State University of New York, Albany; M.S., Purdue University; Ph.D., Syracuse University

COMPUTER SCIENCE

Charles D. Avedikian, Associate Professor (1975)
B.S., University of Massachusetts; M.B.A., Cornell University; M.S., Worcester Polytechnic Institue

Charles J. Glassbrenner, Professor (1967)
B.S., M.S., Siena College; M.S., Northeastern University; Ph.D., University of Connecticut

Mary Ann Hebhardt, Instructor (1986)
B.S., Drexel University; M.C.S., North Carolina State University

David W. Hilton, Professor (1969)
B.S., Salem State College; Ed.M., Ph.D., Boston College

Alfred C. Johnson, Associate Professor (1979)
B.S., Worcester State College; M.A., Memphis State University

Michael E. Mulcahy, Associate Professor (1973)
B.S., Ed.M., Worcester State College; M.S., Worcester Polytechnic Institute

Virginia Z. Ogozalek, Associate Professor (1982)
A.B., Colby; M.S., University of Maine; M.S., Worcester Polytechnic Institute

ECONOMICS

Kee Il Choi, Professor (1970)
A.B., Princeton University; Ph.D., Harvard University

George T. Kelley, Professor (1969)
A.B., College of the Holy Cross; M.A., Boston College; Ph.D., Clark University

F. Stephen Trimby, Associate Professor (1970)
A.B., Assumption College; M.A., Clark University

EDUCATION

Joshua V. Aisiku, Associate Professor (1985)
A.B., University of Ife; M.A., Ph.D., Cornell University

Elizabeth T. Binstock, Associate Professor (1985)
A.B., Wellesley College; M.Ed., Boston University; Ed.D., Harvard University

Josefina S. Bunuan, Professor (1969)
A.B., University of the Philippines; M.Ed., Boston college; Ed.D., Boston University; Dipl. in ECE, Melbourne College

John R. Dowling, Professor (1966)
B.S., Ed.M., Worcester State College; Ed.D. University of Massachusetts

Joan K. Fischer-Juralewicz, Assistant Professor (1987)
A.B., Montclair State College; M.A., Seton Hall University; Ed.D. Rutgers University

Nancy E. Harris, Professor (1970)
A.B., Clark University; M.A., University of Massachusetts; Ed.D., Boston University

Nancy A. Johnson, Professor (1968)
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Mary Ellen Meegan, Professor (1971)
B.S., Framingham State College; M.Ed., Ph.D., Boston College

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David H. Quist, Associate Professor (1970)
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Lynne Sussman, Associate Professor (1985)
A.B., Grinell College; M.S., Bank Street College of Education; Ed.D., Harvard Un versity

ENGLISH

James R. Ayer, Professor (1964)
A.B., State University of New York, Albany; M.A., Columbia University; Ph.D., University of Massachusetts

Phyllis A. Crowley, Associate Professor (1961)
B.S., Worcester State College; M.A., The Catholic University of America

Alfred F. Eddy, Associate Professor (1964)
A.B., Harvard University; M.A., Trinity College

Robert P. Ellis, Associate Professor (1965)
A.B., State University of New York, Binghamton; M.A., Boston College

C. Kenneth Gibbs, Jr., Professor (1970)
A.B., Amherst College; M.A., Rutgers University; M.F.A., Ph.D., University of Massachusetts

Merrill H. Goldwyn, Professor (1968)
A.B., M.A., Harvard University; Ph.D., Columbia University

Linda S. Gordon, Professor (1971)
A.B., Brooklyn College of the City University of New York; A.M., Ph.D., Harvard University

Emmet J. Grandone, Instructor (1965)
A.B., Clark University; M.A., University of Connecticut

Mary Ellen Herx, Professor (1970)
A.B., Creighton University; M.A., Ph.D., University of Nebraska

Jean E. Johnson, Professor (1969)
A.B., University of Wisconsin; M.A., University of Hawaii; Ph.D., Columbia University

A. Barbara Pilon, Professor (1972)
A.B., Brown University; Ed.M., Rhode Island College; Ph.D., Indiana University

Jeffrey L. Roberts, Professor (1970)
A.B., Southwest Missouri State University; M.A., University of Missouri; Ph.D., University of Massachusetts

Richard E. Sullivan, Associate Professor (1968)
A.B., Providence College; M.A., Boston College

Robert E. Todd, Professor (1957)
A.B., Emerson College; M.A., Clark University; M.A., University of Connecticut

Richard S. Tyrell, Professor (1951)
A.B., Boston College; M.Ed., Boston Teachers College

Robert L. Walker, Professor (1970)
A.B., Bard College; Ph.D., University of Connecticut

Charles Wasilko, Associate Professor (1970)
A.B., Dickinson College; M.A., Harvard University

FOREIGN LANGUAGES

Francisco Alcala, Professor (1970)
A.B., University of Comillas; M.A., University of Salamanca; M.A., Sorbonne; M.A., Ph.D., New York University

Jennie M. Celona, Professor (1965)
A.B., Emmanuel College; M.A., Middlebury College; Ed.D., University of Massachusetts

Vincent R. DeBenedictis, Associate Professor (1957)
A.B., Boston College; M.A., Boston University

Margaret A. Kittredge, Associate Professor (1965)
A.B., Clark University; M.A.T., Harvard University; M.A., Assumption College

Katharine M. Shea, Professor (1961)
A.B., Our Lady of the Elms College; M.Ed., Bridgewater State College; M.A., Smith College; Ph.D., University of Massachusetts

GEOGRAPHY AND GEOLOGY

Loren N. Gould, Professor (1959)
A.B., M.A., Clark University; Ed.D., University of Massachusetts

Richard G. Hunt, Associate Professor (1969)
B.S., Indiana University of Pennsylvania; M.S., Southern Connecticut State University

Ronald W. Hurd, Assistant Professor (1970)
B.S., Ed.M., Worcester State College

Robert E. Lingner, Assistant Professor (1968)
A.B., Clark University; M.A., University of Maine

Robert W. Thompson, Associate Professor (1968)
B.S., Worcester State College; M.A., Clark University

HEALTH SCIENCE

Michael A. Burke, Professor (1969)
A.B., College of the Holy Cross; Ed.M., Worcester State College; M.A.T., Michigan State University; Ph.D., Boston College

Yvonne Chen, Associate Professor (1977)
M.D., Dr. Sun Yat-sen University; B.S., Hong Kong Baptist College; M.Ed., University of Cincinnati

Howard E. Munson, Associate Professor (1977)
B.S., Central Connecticut State College; M.S.T., Hartford Seminary Foundation; Ed.M., Salem State College; Ed.D., University of Massachusetts

Donald A. Read, Professor (1972)
A.B., University of Northern Colorado; M.A., University of Maryland; Ed.D., Boston University

Helena V. Semerjian, Associate Professor (1966)
B.S., Ed.M., Fitchburg State College; Ed.M., Boston University

HISTORY AND POLITICAL SCIENCE

Bruce S. Cohen, Associate Professor (1965)
A.B., M.A., Rutgers University

Philip S. Dalton, Assistant Professor (1966)
A.B., A.M., Boston College; A.M., Rutgers University

Clement S. Delaney, Associate professor (1965)
A.B., M.A., St. Michael's College

Paul J. Edmunds, Professor (1963)
A.B., College of the Holy Cross; M.A., Harvard University; Ph.D., University of Wisconsin

Vivian C. Fox, Professor (1969)
A.B., Brooklyn College; A.M., Ph.D., Boston Univeristy

Bernard Goldsmith, Associate Professor (1963)
A.B., University of Michigan; M.A., Clark University

Robert G. Kane, Associate Professor (1968)
A.B., College of the Holy Cross; Ed.M., Worcester State College; M.A., Assumption College

Robert F. McGraw, Associate Professor (1965)
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Frank S. Minasian, Associate Professor (1968)
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A. Gibbs Mitchell, Professor (1968)
B.S., Central Connecticut State College; M.A., Ph.D., Boston University

Najib E. Saliba, Professor (1971)
A.B., Miami University; M.A., Ph.D., University of Michigan

Emmett A. Shea, Professor (1962)
B.S., Ed.M., M.A., Boston University; M.A., Boston College

Robert M. Spector, Professor (1963)
A.B., Ed.M., M.A., Ph.D., Boston University; J.D., Boston College

David J. Twiss, Associate Professor (1968)
B.S., Ed.M., Worcester State College; M.A., Assumption College

Cheng Yuan, Professor (1963)
A.B., Colgate University; M.A., Yale University; M.A., Harvard University; Ph.D., Brown University

LIBRARY

Betsey J. Brenneman, Associate Librarian (1977)
B.S., Kent State University; M.L.S., Syracuse University; M.A.T., Fitchburg State College

Krishna Dasgupta, Librarian (1969)
A.B., Asubosh College; M.A., Calcutta University; M.L.S., Simmons College

Ruth E. Greenslit, Library Assistant (1972)

Pamela R. McKay, Librarian (1978)
B.A., Dickinson College; M.S.L.S., Case Western Reserve University; M.A., University of Massachusetts

William G. Piekarski, Associate Librarian (1983)
B.A., State University of New York, Binghamton; M.L.S., Simmons College

Linda J. Snodgrass, Assistant Librarian (1986)
B.A., State University of New York, Binghamton; M.L.S. Simmons College

Ruth A. Webber, Associate Librarian (1973)
A.A., Mt. Wachusett Community College; A.B., University of Massachusetts; M.L.S., State University of New York, Albany

MATHEMATICS

Vito D. Campo, Professor (1965)
B.Ed., Ed.M., Rhode Island College; M.A., Boston College

John C. Hayes, Professor (1969)
A.B., College of the Holy Cross; Ed.M., Harvard University; M.A., Wesleyan University; M.A., Ph.D., Boston College

W. Mack Hill, Professor (1972)
B.S., Wheeling College; M.S., Ohio State University; Ph.D., University of Cincinnati

Marshall J. Kotzen, Assistant Professor (1969)
B.S., Tufts University; M.S., University of New Hampshire

Robert J. Perry, Professor (1964)
A.B., M.A., Ph.D., Clark University

Robert W. Redding, Professor (1967)
B.S., University of Massachusetts; M.S., University of Rhode Island; Ph.D., Clark University

Kenneth Schoen, Professor (1971)
A.B., University of Connecticut; M.A., Yale University; M.S., Renssalaer Polytechnic Institute; Ph.D., University of Pittsburgh

Manuel Zax, Professor (1968)
A.B., Yale University; Ed.M., Keene State College; Ed.D., Cornell University

MEDIA

Jamsheed Akrami, Assistant Professor (1987)
A.B., Tehran University; M.A. Ed.D., Columbia University

Donald F. Bullens, Assistant Professor (1986)
B.S. Ed., M.Ed., Worcester State College

William Byers, Associate Professor (1971)
A.B., Colby College; B.D., Kenyon College; M.Div., Colgate Rochester Divinity School

Bernarr Cooper, Professor (1984)
A.B., Wabash College, Ph.D., Stanford University

Paul Davis, Professor (1962)
B.S., Ed.M., Worcester State College; Ed.D., University of Massachusetts

Bernard L. McGough, Associate Professor (1965)
A.B., American International College; Ed.M., Westfield State College; M.S., University of Rhode Island

Ann Marie Shea, Professor (1968)
A.B., Anna Maria College; M.A., The Catholic University of America; Ph.D., New York University

MUSIC

Louis J. Celona, Associate professor (1967)
B.M., M.M., New England conservatory of Music; M.A., Middlebury College

Robert K. Sahagian, Associate Porfessor (1968)
B.M., New England Conservatory of Music; M.M., Michigan State University

NATURAL SCIENCE AND PHYSICS

William A. Belanger, Associate Professor (1967)
B.S., Ed.M., Worcester State College; M.N.S., Worcester Polytechnic Institute

Daniel E. Dick, Associate Professor (1969)
A.B., Amherst College; M.F., Yale University; M.L.S., University of Rhode Island

Geoffrey J. Garrett, Professor (1968)
B.S., Antioch College; M.A., Ph.D., Princeton University

Nancy Hicks, Assistant Professor (1987)
A.B., College of Mount St. Vincent; M.A., Ph.D., Harvard University

NURSING

Mary K. Alexander, Professor (1974)
R.N., Jeanne Mance School of Nursing; B.S., University of Vermont; M.S., Ed.D., University of Massachusetts

Anne M. Brown, Professor (1977)
R.N., St. Vincent Hospital; B.S., Worcester State College; M.S., Boston University; Ed.D., University of Massachusetts

Jean A. Campaniello, Professor (1979)
R.N., The Memorial Hospital, Worcester; B.S., Worcester State College; M.S., Boston University; C.A.G.S., Anna Maria College; Ed.D., University of Massachusetts

Celeste T. Campbell, Instructor (1987)
B.S., Lowell State; M.S., Boston University

Barbara Ann Giguere, Associate Professor (1980)
R.N., Worcester City Hospital School of Nursing; B.S., Worcester State College; M.S., University of Connecticut

Lillian R. Goodman, Professor (1973)
R.N., Peter Bent Brigham Hospital; B.S., M.S., Ed.D., Boston University

Sandra A. Hall, Assistant Professor (1985)
R.N., Cambridge City Hosptial; B.S., M.S., Boston University

Mary L. Lovering, Professor (1974)
R.N., Mary Fletcher Hospital; B.S., Syracuse University; M.S., Boston College; Ed.D., University of Massachusetts

Maureen A. McMullen, Assistant Professor (1987)
B.S.N., Salve Regina College; M.S., Boston University School of Nursing

Sheila Q. Rucki, Assistant Professor (1985)
R.N., B.S., Boston College; M.S., University of Connecticut; M.S., Eastern Connecticut State College; Ph.D., University of Connecticut

OCCUPATIONAL THERAPY

Jacqueline R. Brennan, Instructor (1987)
B.S., University of Connecticut; M.A. Assumption College; M.S. in O.T., Sargent College

Deborah M. Dufresne, Instructor (1987)
B.S., Worcester State College; M.S., O.T.R., Boston University

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B.S.O.T., Tufts University, M.S.O.T., Boston University

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A.B., University of Michigan; O.T.R., M.S., Ed.D., State University of New York, Buffalo

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A.B., University of California at Berkeley; O.T.R., M.S., Columbia University

PHILOSOPHY

Neil F. Brophy, Assistant Professor (1971)
A.B., Assumption College; M.A., Laval University

Gerald Robbins, Associate Professor (1971)
A.B., Rutgers University; M.A., New School for Social Research

Dion Schaff, Professor (1971)
A.B., New College; M.A., Ph.D., Brown University

Courtney D. Schlosser, Professor (1971)
A.B., George Washington University; Ed.M., Ed.D., Boston University

Donald F. Traub, Professor (1969)
A.B., Iona College; M.A., St. John's University (New York); M.A., Ph.D., Boston College

PHYSICAL EDUCATION

Janet E. Demars, Assistant Professor (1970)
B.S., Boston University; Ed.M., Springfield College

Helen B. Duquette, Assistant Professor (1969)
B.S., Bridgewater State College; Ed.M., Springfield College

Francis T. Dyson, Associate Professor (1959)
B.S., College of the Holy Cross; M.A., C.A.G.S., Boston University

John P. Mockler, Associate Professor (1952)
B.S., M.A., Columbia University

Margaret M. Nugent, Associate Professor (1964)
B.S., Russell Sage College; Ed.M., Worcester State College; C.A.G.S., Boston University

PSYCHOLOGY

M. June Allard, Professor (1973)
A.B., M.A., Ph.D., Michigan State University

Eleanor Ashton, Professor (1978)
B.S., New York University; Ed.M., Ed.D., University of Massachusetts

Joyce E. Cummings, Professor (1977)
A.B., Emmanuel College; M.A., Northeastern University; Ph.D., Boston College

Aldona L. Daly-Boxshus, Associate Professor (1968)
R.N., Hahnemann Hospital, Worcester; B.S., Clark University; M.A., C.A.G.S., Assumption College

Barbara A. Desrosiers, Associate Professor (1973)
A.B., University of Massachusetts; Ed.M., Harvard University

Bernard J. Guarini, Associate Professor (1965)
B.S., College of the Holy Cross; M.A., Clark University; M.A., C.A.G.S., Assumption College

Joline N. Jones, Professor (1972)
A.B., Ph.D., Syracuse University

Richard K. Kimball, Assistant Professor (1985)
A.B., Dartmouth College; Ph.D., State University of New York, Buffalo

Gordon S. Matheson, Professor (1969)
A.B., Olivet College; M.A., C.A.G.S., Assumption College; Ed.D., University of Massachusetts

John M. Nash, Professor (1970)
A.B., M.A., American International College; Ed.D., Boston University

Richard A. O'Connor, Associate Professor (1968)
B.S., Clark University; M.A., C.A.G.S., Assumption College

Ruth S. Ostenson, Assistant Professor (1970)
B.S., M.A., University of Montana; M.Ed., Northeastern University

SOCIOLOGY

Francis L. Brooker, Associate Professor (1970)
A.B., Brandeis University; M.A., Northeastern University

Robert W. Goss, Professor (1956)
B.S., College of the Holy Cross; Ed.M., Fitchburg State College; M.A., Clark University; Ed.D., Boston College

Baheej B. Khleif, Professor (1972)
Dipl. in Soc. Welfare Policy, M. Soc. Science, Institute of Social Studies, The Hague, Holland; Ph.D., University of Colorado

Frank C. Pizziferri, Professor (1968)
B.S., Boston University; M.S., Illinois Institute of Technology; Ed.D., University of Massachusetts

Faith T. Zeadey, Assistant Professor (1965)
B.S., M.A., Boston College

Matthew A. Zelman, Associate Professor (1973)
A.B., Northeastern University; M.A., Boston University

URBAN STUDIES

Francis I. Amory, Professor (1977)
A.B., M.A.T., Harvard University; M.S.W., Boston University

Harold V. Langlois, Professor (1973)
A.B., University of Rhode Island; M.A., Indiana University; Ph.D., University of Connecticut

Maureen E. Power, Professor (1975)
A.B., Emmanuel College; M.S.W., Ph.D., Brandeis University

Vincent E. Powers, Professor (1972)
A.B., M.A., University of Massachusetts; Ph.D., Clark University

9. Academic Calendars

ACADEMIC CALENDAR—FALL, 1988

September	5	Labor Day
	6	President's Meeting
	7	Student Welcome Day
	8	Classes begin: 8:30 a.m.
	22	Last Day to Add/Drop courses
October	10	Columbus Day: No classes
	27	Failure warnings due in Registrar's office
	31	Last day to declare change in major or minor
November	4	Last day to make up incomplete grades from Spring, 1988
	10	Failure Warnings issued to students
	11	Veteran's Day: No classes
	14-18	Student evaluation of faculty
	14-18	Academic Advising
	18	Last day to withdraw from courses
	18	Last day to elect Pass/Fail option
	23-25	Thanksgiving Recess
	28	Classes resume, 8:30 a.m.
	28-Dec. 2	Registration for Spring, 1989
December	14	Classes end
	15	Preparation Day
	16-23	Examinations
	27-29	Make-up days for examination days postponed due to inclement weather
	29	Semester ends

EXAMINATION SCHEDULE

CLASS TIME		EXAMINATION DAY AND TIME	
MWF	8:30	Friday, December 16	8:30 - 11:30
MWF	9:30	Monday, December 19	8:30 - 11:30
MWF	10:30	Wednesday, December 21	8:30 - 11:30
MWF	11:30	Friday, December 23	8:30 - 11:30
MWF	12:30	Friday, December 16	12:30 - 3:30
MWF	1:30	Monday, December 19	12:30 - 3:30
MWF	2:30	Wednesday, December 21	12:30 - 3:30
MWF	3:30	Friday, December 23	12:30 - 3:30
TR	8:30	Tuesday, December 20	8:30 - 11:30
TR	10:00	Thursday, December 22	8:30 - 11:30
TR	11:30	Tuesday, December 20	12:30 - 3:30
TR	1:00	Thursday, December 22	12:30 - 3:30

Tuesday, December 27: Make-up for first postponed examination day

Wednesday, December 28: Make-up day for second postponed examination day

Thursday, December 29: Make-up day for third postponed examination day

ACADEMIC CALENDAR—SPRING, 1989

January	17	Classes begin: 8:30 a.m.
	31	Last day to Add/Drop courses
February	20	Washington's Birthday: No classes
March	10	Failure warnings due in Registrar's office
	13-17	Spring recess
	20	Classes resume: 8:30 a.m.
	21	Last day to make up incomplete grades from Fall, 1988
	24	Failure warnings issued to students
	24	Good Friday: No classes
	27	Last Day to declare change in major or minor
April	3	Last day to withdraw from courses
	3	Last day to elect Pass/Fail option
	3-7	Student evaluation of faculty
	3-7	Academic Advising
	17	Patriot's Day: No classes
	24-28	Registration for Fall, 1989
May	5	Classes end
	8-15	Examinations
	16	Make-up day: May be used by instructors for make-up of work missed during the semester
	19	Semester ends
	20	Commencement

EXAMINATION SCHEDULE

CLASS TIME		EXAMINATION DAY AND TIME	
MWF	8:30	Friday, May 12	8:30 - 11:30
MWF	9:30	Monday, May 15	8:30 - 11:30
MWF	10:30	Monday, May 8	8:30 - 11:30
MWF	11:30	Wednesday, May 10	8:30 - 11:30
MWF	12:30	Friday, May 12	12:30 - 3:30
MWF	1:30	Monday, May 15	12:30 - 3:30
MWF	2:30	Monday, May 8	12:30 - 3:30
MWF	3:30	Wednesday, May 10	12:30 - 3:30
TR	8:30	Tuesday, May 9	8:30 - 11:30
TR	10:00	Thursday, May 11	8:30 - 11:30
TR	11:30	Tuesday, May 9	12:30 - 3:30
TR	1:00	Thursday, May 11	12:30 - 3:30

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[#1]

1. Administration Building
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3. Sullivan Auditorium
4. Baseball Field
5. Business Adm. Complex
6. Chandler Village
7. Faculty Parking
8. Field Hockey
9. Football/Soccer/Track
10a. Gate House (Main Entrance)
10b. Gate House (Chandler Entrance)
11. Gymnasium
12. Lake Ellie
13. Learning Resources Center
14. Parking
15. Softball
16. Student Center
17. Resident Parking
18. Tennis Courts
19. Sullivan Academic Center
20a. Child Center/Gym Building
20b. Child Center/Chicopee St.
21. Campus Ministry House
22. Handicapped Parking
23. Visitors Parking
24. Alumni House
25. Bus Shelter